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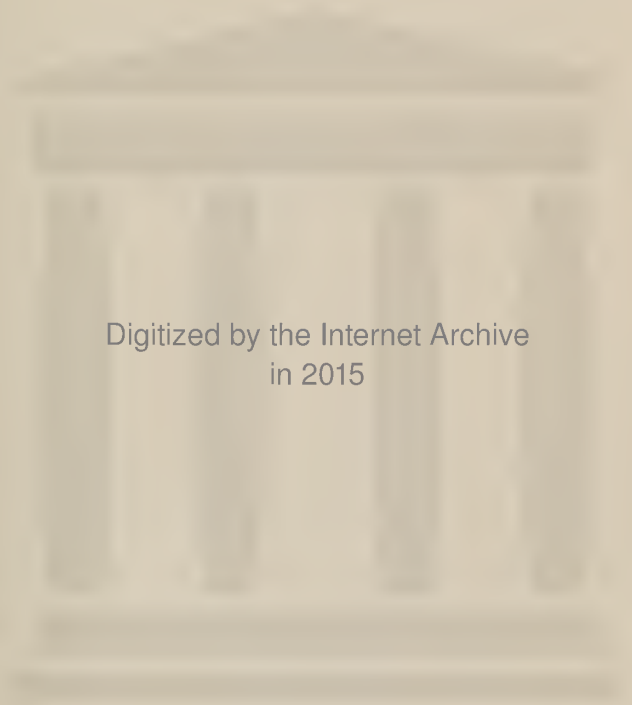

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THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY:

EDITED BY

DANIEL DRAKE, M.D.,

AND

LUNSFORD P. YANDELL, M.D.,

PROFESSORS IN THE LOUISVILLE MEDICAL INSTITUTE.

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TABLE No. I.

COMPARATIVE TABLE OF THE DIFFERENT PARTS OF THE RACHITIC AND HEALTHY FEMALE SKELETON.

DESIGNATION OF PIECES.			FIBULA.		TIBIA.		FEMUR.		RADIUS.		ULNA.		HUMERUS.		CLAVICLE.		STERNUM.		VERTEBRAL COLUMN.		DIAMETERS OF THE PELVIS.								PERIMETERS OF THE CRANIUM.			
																					ANTERO-POSTERIOR.		OBLIQUE.		TRANSVERSE.		TOTAL.		HORIZONTAL.		From one auricular canal to the other, passing over the vertex.		From the nasal ridge to the occipital protuberance.	
	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.	IN.	L.
Dupuytren Museum. 338 . . .	33.	6	9.	9	11.	7	13.	"	7.	1	8.	1	10.	"	5.	5	5.	"	17.	"	4.	"	4.	9	4.	7	13.	1	19.	8	12.	4	11.	10
Maternité. 335	33.	3	7.	1	6.	6	8.	5	1.	"	5.	3	5.	9	4.	5	1.	5	20.	"	1.	11	3.	11	1.	3	10.	1	20.	9	11.	3	13.	3
Mueller. 21	18.	"	11.	3	12.	1	14.	4	7.	6	8.	3	10.	9	5.	8	1.	9	20.	10	2.	7	1.	5	5.	3	12.	3	20.	"	11.	6	11.	9
Clamart. 4	15.	6	9.	6	10.	8	10.	11	6.	4	7.	2	9.	5	5.	2	1.	9	26.	5	2.	7	1.	3	5.	1	11.	11	19.	"	12.	"	11.	3
do. 26	"	"	9.	9	10.	7	10.	8	7.	7	8.	3	9.	10	"	"	5.	9	21.	6	2.	6	4.	9	5.	6	12.	9	"	"	"	"	"	"
do. 16	"	"	11.	11	13.	2	11.	2	8.	8	9.	9	12.	"	"	"	5.	3	22.	6	2.	1	4.	6	1.	9	11.	7	"	"	"	"	"	"
do.	"	"	10.	"	11.	2	10.	11	7.	6	8.	3	8.	7	"	"	"	"	0	"	3.	7	1.	6	5.	"	13.	1	"	"	"	"	"	"
do. 30	32.	"	8.	1	9.	3	9.	11	5.	10	6.	9	7.	10	"	"	"	"	"	"	2.	"	3.	3	3.	3	8.	6	17.	"	12.	10	13.	2
Dupuytren Museum. F.	"	"	11.	5	12.	2	11.	6	7.	5	8.	5	9.	7	5.	2	6.	"	23.	3	3.	1	5.	"	5.	3	11.	"	19.	3	12.	1	11.	3
do.	37.	6	7.	11	10.	9	10.	11	5.	4	5.	9	7.	4	4.	7	4.	"	21.	3	2.	1	3.	10	1.	9	11.	1	18.	10	12.	3	12.	2
do. D. 1.	35.	6	8.	9	9.	"	9.	9	5.	9	6.	5	8.	"	5.	2	1.	6	20.	11	2.	7	3.	11	1.	3	10.	9	18.	1	12.	3	10.	9
do. deposited by Dalmas . . .	35.	3	6.	1	6.	11	7.	5	6.	2	6.	7	6.	6	1.	11	5.	1	20.	9	2.	10	3.	6	3.	9	10.	1	19.	"	13.	3	12.	8
do.	44.	"	10.	7	11.	2	10.	1	7.	10	8.	2	10.	"	5.	11	5.	8	22.	6	2.	11	5.	"	5.	3	13.	2	19.	9	12.	4	12.	3
Rachitic Mean	10.	6	9.	5	10.	1	10.	11	6.	8	7.	6	8.	11	5.	2	5.	"	20.	11	2.	10	1.	3	1.	8	11.	9	19.	1½	12.	6½	12.	"
Normal Dimensions	60.	"	13.	2	13.	6	14.	"	8.	1	9.	3	10.	6	5.	8	5.	5	22.	"	4.	"	1	6	5.	"	13.	6	19.	"	12.	3	11.	6
Ratio of the Rachitic Mean with the Normal Dimensions	0.67½		0. 72		0. 75		0. 78		0. 80		0. 81		0. 85		0. 91		0. 92		0. 95		0. 87								1.01		1.02		1. 01	

RATIO BETWEEN THE LENGTH OF THE SUPERIOR AND INFERIOR LIMBS IN THE RACHITIC AND IN THE WELL-FORMED FEMALE.

	RADIUS AND HUMERUS.	FEMUR AND TIBIA.	RATIO.
Healthy adult female	18. 10	27. 6	1 : 1. 47
Rachitic do. do.	15. 7	21. "	1 : 1. 35

TABLE No. II.

DIMENSIONS OF THE DIFFERENT PARTS OF THE SKELETON IN RACHITIC CHILDREN.

SEX AND AGE.	WAIST.	PERONEUS.	TIBIA.	FEMUR.	RADIUS.	CUBITUS.	HUMERUS.	PERIMETERS OF THE CRANIUM		
								HORIZONTAL.	From one auricular canal to the other, passing over the vertex.	From the nasal spine to the occipital protuberance
	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.
Girl.... aged 2 years....	18. 4	4. 6	4. 9	5.11	3. 6	3. 10	4. 2	18. 6	12. 3	12. 3
do.... " 2½ " ...	26. 6	4.11	6. 3	5. 6	4. 1	4. 4	4. 3	19. "	12. "	12. "
do.... " 2 " ...	19. 10	4. 5	4. 10	5.11	3. 4	3. 9	4. 2	17. 9	13. 2	13. "
do.... " 3 " ...	17. 6	4. 8	5. 1	4. 9	3. 7	4. 1	3. 5	22. 2	15. 2	14.11
Boy.... " 3 " ...	29. 6	5. 6	5. 9	6.10	4. 1	4. 9	4. 8	18. 3	12. 2	12. 5
Rachitic Mean.....	22. 4	4. 9½	5. 4	5. 9½	3. 8½	4. 2	4. 1½	19. 1½	12.11½	12.11½
Normal Dimensions.....	29. 1	5. 4½	5. 9	6. 6	3.11	4. 4	5. 3	17. 6	11. 5½	11.11
Ratio of the Rachitic Mean with the Normal Dimensions.....	0. 76	0.89	0. 91	0.89	0.95	0. 96	0.79	1.09	1.13	1.09

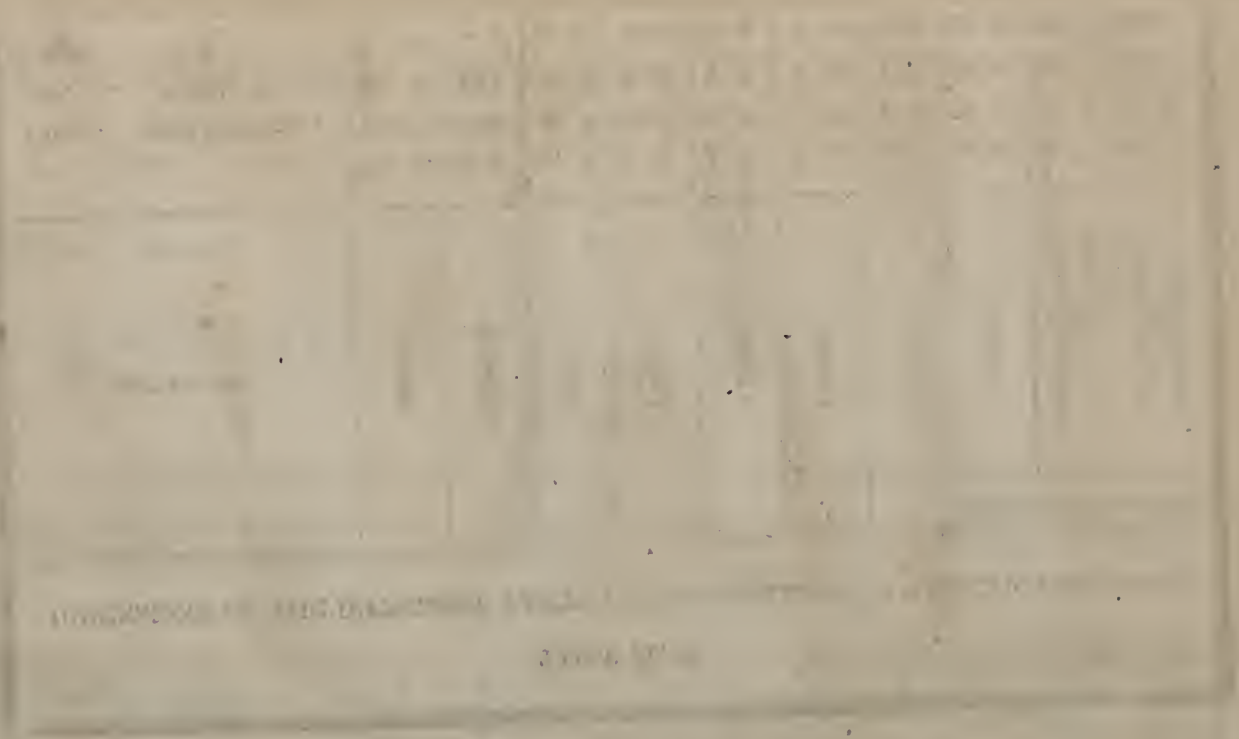
TABLE No. III.

DIMENSIONS OF THE NORMAL SKELETON IN CHILDREN FROM ONE TO THREE YEARS OLD.

SEX AND AGE.	WAIST.	FIBULA.	TIBIA.	FEMUR.	RADIUS.	CUBITUS.	HUMERUS.	PERIMETERS OF THE CRANIUM		
								HORIZONTAL.	From one auricular canal to the other, passing over the vertex.	From the nasal spine to the occipital protuberance.
	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.	IN. L.
Boy.... 20 months old...	25. "	4. "	4. 7	5. "	3. 2	3. 4	4. "	16. "	11. 3	12. 3
do.... 2 years "...	28. 4	5. "	5. 3	6. "	3. 6	4. "	4. 5	16. 9	11. 9	12. 6
Girl.... 2½ " "...	29. 1	5. 4	5. 7	7. "	3. 9	4. 2	5. "	18. "	11. 6	11. "
do.... 2½ " "...	35. 1	6. 5	6. 9	7. 8	4. 7	5. 1	6. 3	18. 6	12. 6	12. "
do.... 2 " "...	29. "	6. 3	6. 6	6. 11	4. 1	4. 9	5. 10	18. 2	11. 6	13. "
do.... 20 months old...	28. "	5. 3	5. 9	6. 3	4. 3	4. 10	5. 10	17. 6	10. 3	10. 9
Mean Length.....	29. 1	5. 4½	5. 9	6. 6	3. 11	4. 4	5. 3	17. 6	11. 5½	11. 11

RELATIONS OF THE SUPERIOR TO THE INFERIOR LIMBS:

Radius and Humerus.... 9*in.* 2*l.* Femur and Tibia.... 12*in.* 3*l.*—Ratio.... 1 : 1. 34



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ART. I.—*Memoir on the General Characters of Rachitis;* read before the Royal Academy of Sciences of Paris, July, 1837. By JULIUS GUERIN, M. D.

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ADVERTISEMENT.

I read this memoir before the Academy of Sciences in the month of July, 1837. That period, already remote, is not as might be supposed, that of my observations on rachitis. These observations date from 1834 and 1835. They form part of a general work on the deformities of the osseous system, which I presented to the "Concours" for the great prize of surgery of the Academy of sciences in March, 1836. The report of the Academy at this concours proves it. The same conclu-

sions in fact are found there,* that the reader will discover at the end of this memoir. To establish this circumstance is no less useful to science than to the author. To science, for is it not a guarantee of the truth of the results to which I have attained, to be able after five years of daily and repeated verifications to maintain them as I first announced them? To the author it is not more indifferent to fix clearly the date of his researces. When a matter is new and cultivated by a small number of persons, the epoch gives itself little trouble to inquire to whom the priority of certain observations belongs. It is only when a very great number happen to apply themselves to the study of questions which at first had been made the object of study by a few, that the interest of knowing to whom belongs such or such a view, such or such an idea, begins to manifest itself; but, before that, there may be, and there often are, partial or total reproductions of the original works, that embarrass subsequently those who wish to write the history of science in an impartial manner. How often, indeed, does it not happen that the discoverer cannot be distinguished from the plagiarist! Then they are associated together in the same discovery, as is done every day in matters of judicial appreciation. Desiring to prevent, so far as my labors are concerned, this half-way justice, very convenient for every one except those whom it dispossesses, I have thought it right to insist upon the date of the results announced in this memoir: that authentic date is, I repeat, the month of March, 1836, since all the facts concerned were committed to a work deposited in the Academy of Sciences the close of March, as the printed report of the Commission of the Academy at that meeting shows.

There still exists among physicians great difference of opinion in regard to what should be understood by rachitis, as well as in respect to the general phenomena of this affection, the nature and frequency of the deformities characterizing it, and the different species of alterations which it produces in the osseous system. Owing to the etymology of the word, the name of rachitis is commonly given to the deformities of the vertebral column; yet these deformities are rarely the product of the disease to which they are attributed. A great many authors, too, give this name to every species of softening of the osseous textures occurring in adults: like the case of the woman Supiot, reported by Morand, of the woman with nails observed by Morand the younger, and many other examples of softening of the osseous system preserved in the history of the science. Lastly, it is not rare to find physicians who confound rachitis with scrofula, or unite them as causes of the same effects. Yet, most of the deformities of the spine, the disease of Mad. Supiot, a great

*See the Report of the meeting for the great prize of Surgery, p. 22, article Rachitis, in the published proceedings of the Academy of Sciences for the year 1837.

number of other histories of supposed rachitis preserved in the books, and scrofulous affections whatever they may be, neither belong to rachitis, nor are dependant on it remotely or directly. This uncertainty and obscurity have proved to me that few precise notions are entertained in regard to the malady to which the term rachitis, as established by Glisson, Mayow, and J. L. Petit, ought to be restricted. With the view of supplying this deficiency, I have devoted myself to multiplied researches upon the external characters of this affection, its mode of invasion and development with respect to the age, sex, and the parts of the osseous system that it successively occupies; the general phenomena which precede and accompany its evolution; the alterations of form and texture which it produces in the osseous tissue; the circumstances under which it is developed, and its presumed cause; in fine, I have sought to give precision to the diagnosis of rachitis in reference to the affections with which it has been confounded. I have examined separately each of these points as so many terms indispensable to the determination of the malady, and I am convinced that most of the descriptions hitherto presented for one and the same disease, have joined in a confused manner characters proper to several diseases, and neglected precisely those that belong specially to rachitis. It is the result of these inquiries, pursued attentively for several years amongst a great number of subjects differing in age, sex, and conditions, that constitutes the object of this memoir.

Sec. I.—*General Forms and Characters of Rachitis upon the Skeleton and the Living Body.*

In order to have at once a general idea of rachitis, and embrace at a single glance the assemblage of external forms

and characters which this affection assumes in its complete manifestation, it is sufficient to examine in turn the skeleton of a person who has experienced it in a marked degree, and a living individual who presents it in its most advanced period.

In the skeleton, the whole osseous frame-work, from the bones of the feet to those of the cranium, is seen to have undergone numerous deformities, and changes of proportion and direction: the bones of the members are regularly curved like an arc, and more or less twisted on their axis, particularly the tibia and fibula, then the femur, and in a less degree the bones of the superior limbs: the extremities of these bones are swollen, rounded, enlarged and deformed: the articulations of the feet and hands offer anormal directions and relations: the apophyses and points of muscular attachment are salient: the ribs are rounded as well as swollen, and present at their sternal extremity a curvature whose concavity looks forwards and outwards: the thorax is thus flattened transversely, and depressed in the form of a trough level with the articulations of the ribs with the sternal cartilages.

The vertebral column deviates laterally or posteriorly, and presents a succession of alternate curvatures. The surfaces of the vertebræ are rounded, as it were distended and swollen, and present in several points depressions which have approximated the articular surfaces of their bodies. The vertebral appendices participate in the same appearances, and are more or less depressed as if crushed in the direction of vertical pressure and muscular action. The pelvis has lost its symmetrical conformation; the sacrum is sometimes vertical, at other times more crooked than in the normal state, and it offers an unsual thickness. The cocygeal bones are more or less approximated and forced upwards and inwards; they are

thicker in every direction, and participate in the enlargement affecting all the spongy bones. The same is true of the scapula and sternum: they offer an anormal configuration, are shortened, swollen, and thickened and curved on the flat side. The head is generally voluminous, the cranium being thickened, especially upon the sides. The bones of the face, owing to the increased development, present more marked saliences, and sharper and more prominent angles. The relations of proportion of every part of the osseous system are generally perverted: the skeleton, as a whole, like each of the bones composing it, offers a true reduction in length and in extent, and gives evidence of an arrest of development. Thus, viewed upon the skeleton, rachitis evidently consists in a general affection of the bony system, occupying all its divisions, diffused through its smallest appendages, and discovering itself without by a general swelling of the epiphyses and spongy bones, and by the curving of the long bones and vertebral column; the whole accompanied with a character of general alteration of the surfaces that gives to the osseous tissue an appearance of thickening as if all its component parts had been swelled, distended and softened by the presence of a foreign substance; and an appearance of general deformity, as if the weight of the superior parts, and muscular contraction, had impressed their influence incessantly upon every part according to the direction and proportion of their action.

Upon the living body, the prominences and deformities of the skeleton can be distinguished more or less easily. The face is characteristic: the prominences of the cheek bones very marked, the features wan. The subject has the physiognomy belonging to a more advanced age; the eyes are very open, lively and brilliant, the wings of the nose dilated,

the mouth wide and gaping. The head is thrust down as it were between the shoulders. The chest is narrow, contracted, flattened or depressed laterally. The clavicles, following the approximation of the shoulders, increase their curvature. The trunk and limbs are thrown into a heap; the articular extremities, the tarsus and the carpus particularly, are swollen; all these parts are as it were retained in one another, and as if arrested in their development, whence our ancestors said correctly that rachitic children were *knotty* (noués.) The whole being is shrunken and stunted. The skin is generally dull and earthy; that of the face is sometimes pale and slightly violaceous; sometimes, on the contrary, it is colored and somewhat blotched with red; this last peculiarity is observed chiefly among the children of the wealthier classes, which present the disease in a feeble degree only, such as the deviation of the knees, or the incurvation of a leg, without any very marked general reaction. In the rest of the body the skin presents a pale, dull color, offers numerous folds in the concavities of the curvatures,* and at the swollen articulations; the pilous system is developed principally along the vertebral column. The muscular system is thin, the muscles are short and as if struck with an arrest of development. The motions are constrained and difficult, the walk painful, reeling, and often completely impossible. The subjects avoid standing on the legs. Respiration is short and laborious; is hardly thoracic, but diaphragmatic or abdominal. The abdomen is large, tense, but not painful; the skin warm and moist. The subject perspires a great deal, especially about the abdomen and head, and chiefly during sleep; the sweats are remarkably acid. The appetite is feeble, the thirst pretty great. Di-

*Whenever this term occurrs hereafter, I shall use the word *lesser curvature.*

gestion is difficult; there is nearly always diarrhœa, or if it disappear, it alternates with constipation and returns with the greatest facility. The stools are serous, the urine abundant and but little colored. The pulse is small and frequent, almost febrile. The impulse of the heart is feeble. Intelligence is ordinarily active. The sensibility is exquisite and the subjects cry on the least touch, although there is no point particularly painful. The bones of the limbs are bent or incompletely fractured with the greatest ease; there are some cases even in which muscular contractions alone saffice to bend them.

Such is rachitis seen in the assemblage of its external forms upon the skeleton, and of its general characters upon the living body: presented as it has just been, this description is an abstract of the beginning, mode of invasion, course, periods, and degrees of the malady; it is composed only of the prominent and perfect features, without considering their mode of development, and above all without determining the immediate characters of the osseous tissue. I shall now examine those different combinations as they are found in nature, and as I have verified them in the subjects submitted to my observation.

Sec. II.—*Mode of Invasion and Development of Rachitis; Influences relative to the age, sex, and the parts that it affects.*

Rachitis properly speaking is a disease of infancy; it is rarely seen in the fœtus, most frequently towards the age of from eighteen to twenty months, very seldom after the age of puberty. In three hundred and forty-six cases examined by me in reference to this point, the invasion occurred as follows:

Before birth, - - - - - - -	3	cases.
In the course of the 1st. year, - - -	98	"
" " " 2d. " - - -	176	"
" " " 3d. " - - -	35	"
" " " 4th. " - - -	19	"
" " " 5th. " - - -	10	"
From the 6th to the 12th. " - - -	5	"
	346	"

It attacks both sexes with nearly equal frequency. Of these three hundred and forty-six cases, there were

Males, - - - - - - - -	148
Females, - - - - - - - -	198
Total, - - - - - - -	346

The knowledge of these two orders of facts relative to the influence of rachitis in respect to *age* and *sex* offers already two valuable characters for showing that certain diseases, and many deformities of the vertebral column that have been attributed to rachitis, are the product of other causes: so that every species of softening of the bones in adults, and all deformities which supervence almost exclusively in young girls towards the age of puberty, are not caused by this malady. The truth of these conclusions will appear more clearly in proportion as I make known the true characters of the affection.

Mode of Invasion and of Development; Periods.

We must not suppose that rachitis commences at the moment only of the deformity of the bones. This manifestation of the disease belongs to an order of secondary facts. Before passing into deformity of the osseous system, it is announced by some more or less perceptible general phenomena, that are wanting in those cases only in which

the affection is slightly marked. These phenomena are gastro-intestinal derangements, diarrhœa, swelling of the abdomen, nocturnal sweats, a febrile disturbance, a feeling of weakness, and a marked sensibility of the whole osseous system. The individual becomes melancholy, and morose; his features alter and assume a withered look; the muscular system loses its consistence, and the whole being seems to be affected silently by a general morbid cause which has as yet no other external manifestation than these general phenomena. Towards the end of this first period, which I call that of *incubation*, or *effusion*, as will be seen hereafter, the articular extremities swell; there is yet no curvature, and it may even happen that there may be none in the whole course of the malady. I have observed several examples of well marked general rachitis in which the long bones, and vertebral column preserved a remarkable rectitude. The swelling of the epiphyses and the shortening of the long bones were the sole physical characters of the affection which ran through all its periods without producing incurvation of the bones of the members or of the vertebral column. Nevertheless it is far from being thus in the generality of cases. Almost always the deformity of the skeleton succeeds immediately the period of incubation.

The duration of this period is from two to six months. I have seen three children in whom it was almost imperceptible. The bones had become crooked without the health of the subjects appearing to have previously suffered. These instances are rare. In the large majority of cases the characteristic phenomena of this period are among the most manifest. Yet we must beware and not mistake the effect for the cause: most rickety children have been badly nourished, badly lodged, badly aired, and these anti-hygienic conditions have developed in them a state of languor, disorder, and suscepti-

bility in the digestive functions. The true characters of the period of rachitic incubation are the nocturnal sweats of the belly and head, doughiness (emhâtement) and swelling of the belly, diarrhœa without griping, a moist heat of the skin, a constant and uniform febrile movement, and lastly a great sensibility of the osseous system, and an aversion on the part of the patients to the erect position.

The period of deformity is announced ordinarily by the swelling of the ankles, the knees, and the wrists; these articulations acquire nearly double their ordinary volume; they are knotty-like, and between their surfaces of junction, for instance between the wrist and forearm, between the leg and the foot, the skin forms a deep fold which betrays the excess of development of the articular extremities covered by it, and their want of immediate conformity. Very soon the bones of the legs bend, the knees deviate, and the thigh-bones, hips, chest, vertebral column, and the other portions of the skeleton partake of the general alteration of form. Whilst the local symptoms become more and more marked, the general symptoms augment in a sensible manner: the belly continues large; a great deal of gas accumulates there, and sometimes a quantity of liquid appreciable on percussion. The diarrhœa persists and frequently augments; the urine and sweats become more and more copious; the respiration is frequent, laborious, and purely abdominal; the febrile movement is characterized by a sensible heat of the skin and a uniform acceleration of the pulse, such as are observed in the continued fevers of consumption. The sensibility of the osseous system increases; the patients cry on the slightest compression of their limbs; all the functions languish. The constitution becomes enfeebled, the color fades, the muscular system becomes impoverished; standing and walking are impossible, and are suspended during the greater part of this period. At

the same time that the deformity of the osseous system is augmenting, the disease arrives at its height of intensity. This period lasts from one to three years, and it is during this space of time that we see the distortion of the different parts of the skeleton successively take place. This distortion is not always general, or at least it is not perceptible in all the dependencies of the osseous tissue. For instance, the disease is sometimes limited to the swelling of the epiphyses, particularly to the swelling of the articulations of the knee, the malleoli and the wrist; to the deviation of the knee; to incurvation of one or both legs; to swelling of the epiphyses, with flattening of the chest or curvature of the spinal column: I have observed all these combinations.

Proportion and order of succession of the Deformities.

It was a subject of curiosity to know in what proportions and in what relations these various deformities appear, and in what order they develope themselves, or succeed each other. Here is the result of my observations in this respect:

In four hundred and ninety-six cases of rachitis there were

With general symptoms and swelling of the articulations, without curvature, - -	11	cases
With deformity of the inferior limbs and swelling more or less marked of the wrists, -	485	"
Total, - - - - - -	496	"

Among this number, deformities occurred simultaneously

In the continuity of the superior members -	14	times
" " of the vertebral column, -	48	"
" " of the thorax, - - -	59	"
Apparent development of the cranium, - -	17	"

Whence it follows that rachitis seldom adheres to the development of the epiphyses without a curvature of the diaphyses; that the superior members show by the swelling of the wrists their participation in the general affection, but that they are rather infrequently distorted; that the inferior members are so nearly always, and that the deviations of the spine are to the deformities of the inferior limbs in respect to frequency about as one to ten. The proportion of the deformities of the chest is a little higher, and the development of the cranium a little less frequent.

As to the order of succession of the deformities it appears to be as follows: swelling of the epiphyses of the lower limbs, deviations of the knees, curvatures of the tibia and fibula, curvatures of the femur; next the enlargement of the wrists, and simultaneously or consecutively the distortion of the pelvis; then swelling and distortion of the ribs, scapulæ, clavicles, and the deviation of the spine; the development of the cranium and swelling of the facial bones take place last. This order of succession is incontrovertible. In forty-two cases that I have observed and attended for several years in Paris, the rachitis manifested itself forty-one times by the swelling of the articular extremities and curvature of the inferior limbs: in one only, the affection seemed to commence by the deviation of the spine; in none by the distortion of the thorax.

The interval which intervenes between the development of the deformity of the spine, or of the thorax, and that of the inferior members, varies from one to three years. In by far the greater number of cases, nevertheless, the spinal deviation has discovered itself about one year after that of the limbs. It is an unquestionable law, however, and one that scarcely admits of an exception, that rachitis proceeds in

the distortion of the skeleton from below upwards, and that the deformity of the spine is the last to manifest itself. These observations upon the order of development of rachitic deformities, are further confirmed by the following, namely; that the degree of these successive deformities is ordinarily in conformity with their order of manifestation. Thus the bones of the legs are generally more deformed than the thigh-bones; the latter a littler more than those of the pelvis; these in their turn more than those of the superior members and the thorax; then come almost on the same line, the distortion of the vertebral column, and the degree of enlargement of the cranial bones. The deformity the most important to describe in its relations of succession and of degree was that of the pelvic bones: now I have remarked that the distortion of these bones was always accompanied by that of the bones of the inferior extremities, and that the degree of deformity of the latter, compared with that of the bones of the superior extremities, expressed pretty well the degree of deformity of the pelvic bones; whence it follows,

1. That all rachitic deformity of one portion of the skeleton implies that of those placed beneath it: for instance, that of the vertebral column implies that of the pelvis; the latter, that of the thigh-bones, that of the tibiæ and fibulæ, and the first implies the last;

2. That the degree of each deformity is in relation with the order of succession to which it is subjected, that is to say, the degree of the deformities diminishes from below upwards;

3. That every isolated deformity of one of the superior portions of the skeleton, of the vertebral column, for example, without deformity of the parts situated beneath, is not due to rachitis.

When patients have arrived at the height of the period of *deformity*, a third order of phenomena manifests itself, constituting a third period of rachitis, which I call that of *resolution* or *consolidation*. It is announced by the progressive diminution of the symptoms belonging to the preceding period. Thus the pulse loses its frequency, the diarrhœa diminishes and even ceases altogether. The abdomen gradually loses its hardness and its fulness: the urine is discharged less frequently, and of a higher color; the sweats become much less, and it is principally by this symptom we recognize that the disease is in its period of resolution or of consolidation. The skin is less hot and less humid; it resumes its healthy color. The face is no longer contracted, and the complexion is animated. In a word all the functions successively resume their activity; the digestion, the respiration, the circulation are restored and made regular; the muscular forces return, and the patient, more confident in himself, and above all freed from that sensibility and feebleness of the limbs, resumes the exercises of standing and walking, often after having suspended them for a long time.

On the part of the osseous system, this period of the disease offers some phenomena which it is no less important to note. The epiphyses lessen sensibly in volume; we may sometimes verify a diminution of from one to two inches in the space of three or four months. The complete resolution of the epiphyses may thus take place by the efforts of nature alone. It is not so with the deformities of the skeleton; they often diminish of themselves, but rarely disappear completely without the aid of mechanical means; I have observed, notwithstanding, several examples of spontaneous correction of curvatures of the limbs under the influence of a general treatment; but the most frequent occurrence, especially

when the curvatures have been carried to a certain degree, is the persistance of the deformity, and the consolidation of the bones in this anormal disposition. It is remarkable that after the period of resolution the deformities of the limbs no longer augment, but then, too, they no longer diminish of themselves. The bones that, in the preceding period, were soft, and flexible by the least efforts of the hand, have become hard, solid, and completely inflexible, whatever effort one may make. Having arrived at the end of this period of the malady, the subjects are healed, or approach a complete cure, but they retain their deformities.

The termination of rachitis does not always take place by complete resolution. Some patients in whom the affection has been carried to a considerable degree, which is betrayed by the universality and exaggeration of the deformities of the skeleton; these patients, I say, preserve during part of their life, and even through the whole of it, traces of the profound disorder which has affected their skeleton. In them the rachitis has passed into the *chronic state.* The signs proper to this phase of the malady no longer offer any analogy with those of the three periods of the acute affection; there is neither fever, nor sensible alteration of any of the principal functions. The chronic rachitis manifests itself by two constant and pretty decided symptoms, a fatty (graisseuse,) frail constitution, made evident exteriorly by a pale and leaden complexion, and a great fragility of the bones. This fragility is such that the compression of certain bones between the fingers, is sufficient to break the external table, which is not thicker or more consistent than an egg-shell.

Such are the external phenomena characterizing the three periods of rachitis:—its period of incubation, of deformity, and of resolution or consolidation. The knowledge of these

phenomena leads already to some general results, several of which are entirely new, and others have not been well settled: these results may be summed up as follows:

1. Rachitis is exclusively a disease of infancy;

2. It offers a period of incubation characterized by some general symptoms which do not as yet belong to the affection of the osseous tissue;

3. Considered in its effects upon the bony textures it is a general malady of the whole skeleton, which manifests itself however in different degrees and under different forms in each portion of the skeleton;

4. That rachitic deformities of the skeleton proceed successively from below upwards, from the bones of the leg to the thigh-bones, from the latter to those of the pelvis, from the pelvic bones to those of the superior limbs and of the thorax, and lastly the spinal column and cranium;

5. The degree of the deformities is in relation with their order of development: the deformity of one portion of the skeleton implies always that of the other parts situated beneath it;

6. Rachitis, considered in the development and the series of its phenomena, offers distinct periods during which the disease changes more or less in aspect and character.

Let us pass now to the history of another order of facts, to the examination of the immediate characters of the osseous tissue; this examination will only serve to establish more firmly the foregoing conclusions.

Sec. III.—*Immediate Characters of the Osseous Tissue.*

The immediate influence of rachitis upon the osseous system is revealed by four different orders of facts: by the *deformity of the bones;* their *reduction in dimensions;* the

intimate *alterations* of their tissue; aad lastly, by the *disorder* and *delay* it occasions in the progress of ossification. The facts relative to the deformities of the skeleton have been noticed at all times; I have nothing to add for the moment to the general indications that I have heretofore given; I shall recur to it in detail when giving the particular history of the different orders of deformities produced by rachitis. I pass at once to the three orders of facts: the *reduction in dimension of rachitic bones*, the *alterations of their tissue*, and the *influence of rachitis upon the progress of ossification.*

A.—*Reduction in the Dimensions of the Bones.*

I have collected a certain number of skeletons, offering evident traces of rachitis, from the Dupuytren Museum, the Museum of Clamart, and of La Maternité, which I have added to several of my own. I have measured with the greatest care the relative dimensions of the bones of the superior and inferior members, in comparison with their length in the healthy state; the comparative dimensions of other bones of the skeleton, of the pelvis, vertebral column, scapula, clavicles and sternum; from my researches committed to the table placed at the end of this memoir there results:

1. That most of the bones of the rachitic, compared with those of the normal skeleton, are affected with an arrest of development in regard to their different dimensions.

2. That this reduction, independently of what results from the deformity of the bone, may amount to one-half the ordinary length of the bone.

3. That this reduction is in nearly a constant relation with the order followed by the disease in its development; in other words, that the reduction of the bone is generally so

much the greater as the portion of the skeleton is more inferior, and that it diminishes gradually from below upwards; from the bones of the legs to the thigh-bones, from these to the pelvis, from the pelvis to the superior members and the spinal column, etc., so that the normal relation established between the length of the upper and lower limbs diminishes in favor of the former.

4. That the reduction of the inferior members by comparison with that of the superior members tends to establish that rachitis has the effect of perpetuating, by a more sensible arrest of development of the inferior members, the relations that existed between the superior and inferior members, at the time when the affection seized them.

These various results flow rigorously from the numerical relations that I have consigned in the three tables placed at the end of this memoir. It is there seen, in fact, that in each of the cases which have been analyzed the bones affected with rachitis were never so long as the healthy bones, and that their mean length especially was sensibly less than the normal mean length. (See Table No. 1.)

I have taken for a term of comparison the skeletons of rachitic females exclusively, in order to have more rigorous relations, and such as conduct to more direct practical applications in what concerns the measurements of the pelvis.

Thus, Table No. 1. in three rachitic female skeletons the mean length of the bones was as follows:

	Rachitic Bones.	Normal Bones.	Difference.
1. Peroneus, - - -	9*in.* 5*l.*	13*in.* 2*l.*	3*in.* 9*l.*
2. Tibia, - - -	10 1	12 6	3 5
3. Femur, - - -	10 11	14 0	3 1
4. Radius, - - -	6 8	8 4	1 8
5. Cubitus, - - -	7 6	9 3	1 9
6. Humerus, - - -	8 11	10 6	1 7
7. Clavicles, - - -	5 2	5 8	0 6
8. Sternum, - - -	5 0	5 5	0 5
9. Column, - - -	20 11	22 0	1 1
10. Three diam'rs of the Pelvis,	11 9	13 6	1 9

This comparison of the different parts of the skeleton shows not only that the reduction of rachitic bones is affected from below upwards, but that it occurs in each of them compared with the corresponding ones of the normal skeleton, according to a series of pretty regularly decreasing numbers, as may be seen by the following indication of mean lengths extracted from my first table:

Peroneus,	28*in.*	in 100	Radius,	20*in.*	in 100	Clavicles,	9*in*	*in* 100
Tibia,	25	"	Cubitis,	19	"	Sternum,	8	"
Femur,	22	"	Humerus,	15	"	Column,	5	"
The three diameters of the Pelvis, - - -							17	"

Thus 28, 25, 22, 20, 19, 15, 9, 8, 5, is the formula of the decreasing reductions of rachitic bones from below upwards.

Whence it follows:

1. That the reduction of rachitic bones is a general fact which is effected according to the same law as their deformity, successively from below upwards, and gradually from above downwards.

2. That the dimensions of a rachitic bone being known, the dimensions of the other parts of the skeleton may be approximately determined.

3. That the reduction of the three diameters of the pelvis in rachitic females follows that of the parts composing it, and

that the degree of this reduction is intermediate to the degree of reduction in the femur or the humerus.

As to the relation existing between the length of the upper and lower extremities affected with rachitis, considered as perpetuating the relation existing at the time the affection invades the osseous system, it is a fact as unquestionable as the preceding. I have demonstrated that the mean of the most frequent invasions of rachitis corresponds to the age of from eighteen months to two years; now, according to a calculation that I have made of the comparative length of the superior and inferior members at this age, I find, as any one will be convinced by casting his eyes over Table No. 2, that in the healthy infant of two years, the length of the superior members is to that of the inferior as 1 to 1. 34. This relation in the rachitic adult is 1. 35, whilst in the healthy adult it is 1. 46. It will be seen, therefore, that in this circumstance, rachitis, acting as a cause of the arrest of development, gives rise to effects analogous to those produced by the causes which impede the evolution of organs in the fœtus, that is to say, by perpetuating the phase of development corresponding to the time of arrest. I need not lay down here the physiological reason which accounts for the relative inferiority of the lower extremities of children of tender age; it is a fact belonging to science that needs only be cited in order to be admitted with the authority of a demonstration.

Thus far I have considered the reduction of rachitic bones only in its most perfect manifestation upon the skeleton of adults. Now this fact, observed at so remote a period of the malady, might be considered as a consecutive effect of its influence, and not as one of its direct characters, the more so as some authors who have written upon rachitis, deny the existence in this malady of an arrest of development of the

bones. To solve this difficulty and give to my observation all the precision of which it was susceptible, I have submitted the various parts of the skeleton of several rachitic children to rigorous measurements repeated at an interval; for instance, I have taken the dimensions of the bones of the leg, the thigh, the forearm, the arm, the vertebral column and of the entire waist, repeating these measurements at an interval of several months, and have obtained the knowledge of these two facts, to wit:

1. That children affected with rachitis from about the age of one year, are smaller at the waist, and have every part of the skeleton generally shorter, than healthy children of the same age: (Table No. 3.)

2. That during the first two periods of the disease, the growth of the bones in length is completely arrested in a certain number of cases; in some others it continues, but, generally, in a manner perceptibly slower, and in particular slower in the inferior extremities than in the superior. In some cases, children affected with rachitis in a marked degree, have ceased to grow for eight or ten months; others have continued to grow, but not in a very sensible manner. Lastly, in comparing the degree of increase of the inferior with that of the superior members, I have observed some cases in which the superior alone had continued to be developed, whilst the inferior had remained stationary, but I never observed the contrary. This fact of the want of growth, or simply of a tardiness in the growth of the bones in length, has appeared to me subordinate to the influence of the degree of the malady; with a highly marked rachitis, the growth was completely suspended; with a less degree, it was only diminished. The relation which this fact sustains to the termination of the rachitis, confirms again its subordination to

the direct influence of this malady. For instance, as soon as the period of consolidation or of resolution has commenced, the growth of the bones in length is renewed, but nearly always with less activity than in individuals who have never had rachitis; and this tardiness of increase continues until the cessation of the development of the skeleton, so that the sum of the reduction which the long bones present in rachitic adults is composed of two added results: of the reduction proceeding from a true arrest, or simply from a diminution of increase during the malady, and from a diminution of increase subsequent to the malady. I think, moreover, that to the influence of the degree of the affection, considered as the immediate cause of the more marked arrest of development, it is proper to add the influence of the age at which the disease made its invasion; for the rachitic adults who have remained the smallest are those who had been attacked with the disease at a more advanced age, at the fifth, sixth, or seventh year.

I have imagined I could see, moreover, in these rachitic individuals, that the bones had less tendency to become crooked, and that the disease betrayed itself chiefly by the swelling of the epiphyses and the shortening of the long bones.

Such are my observations relative to the reduction of rachitic bones. They may be recapitulated thus:

1. Most of the bones of the rachitic skeleton are always relatively less developed in length and in breadth than those of the normal skeleton.

2. This reduction, independently of that which results from the deformities, may be carried to more than half of the normal dimensions.

3. The reduction of the rachitic bones is effected according

to the same law with their deformities, successively from below upwards, and gradually from above downwards.

4. The decreasing series of the rachitic reductions from below upwards is represented by a regular series of numbers which permit us, the dimension of one bone being known, to determine the approximation by that of other parts of the skeleton.

5. The reduction of the three diameters of the great pelvis follows that of the dimensions of its component parts; the degree of this reduction may be calculated by means of the reductions of the femur and humerus.

6. The greatest reduction of the inferior compared with that of the superior members establishes between these parts relations of lengths which repeat and perpetuate exactly those of the age at which the malady was developed.

7. The reduction of the bones considered in rachitic adults is the result composed of the arrest of development of the osseous system under the direct influence of the disease, and of the consecutive slowness of its increase subsequent to the disease.

8. The reduction of rachitic bones is a general, and as constant a character of the malady as their deformity.

B.—*Alterations of the Texture of Rachitic Bones.*

The question of the alterations of texture of rachitic bones, has frequently, and for a long time, occupied the attention of anatomists. Among all the authors who have pubblished their observations on this important point, there are not two who agree in the results arrived at. This diversity of opinion has seemed to me a proof of the inaccuracy of most of them, and I have explained it by a cause which nearly always accounts for the dissentions and contrariety of opin-

ion that prevail amongst men who observe and study pathological facts. This cause is too clearly demonstrated, in what concerns rachitis particularly, for me not to indicate it here, the more so as it will have the effect of making us admit definitively whatever is true in the observations of those who have preceded me.

All the authors who have accounted for the alterations of texture of rachitic bones, have considered rachitis as an affection of the same kind at all epochs of its development, allowance being made for its periods, degrees, and acute or chronic form. When opening a rachitic bone the alteration which they supposed they saw was, in their view, the single characteristic of the disease, and if this fact was in opposition to those formerly indicated, the latter were declared figurative, hypothetical, and regarded as never having occurred. And yet the alterations of textures of the osseous tissue in rachitic individuals have their phases, their commencement, degrees, periods, and termination. Bound to the disease, of which they are the partial manifestation only, they follow the course of its development, commencing, increasing, diminishing, disappearing, or perpetuating themselves with certain appearances that vary like the other characters and symptoms of the affection which produces them. It is difficult to understand, indeed, how this error could be committed, and yet it has been nearly always in the observation of all diseases, at least in the origin of their study. What follows will prove that there was still this confusion of facts in respect to rachitis.

After having opened and examined a large number of rachitic bones, I have arrived at the conclusion that the alterations of texture which they present are positively different according as they belong to the period of incubation, of de-

formity, or of resolution, and according as the disease is completely resolved or has passed into the chronic state. I shall point out the different alterations proper to each of these phases of the malady which I shall arrange in two categories, the first comprising every period and degree of *recent* or *acute* rachitis, and the second every period and degree of *ancient* or *chronic* rachitis.

a.—*Texture of the Bones in Recent or Acute Rachitis.*

1. Alterations of texture proper to the period of rachitic incubation.—It is rather difficult to procure bones belonging to this period of the malady; first, because the deformity of the skeleton does not yet exist, at least in any very sensible manner, and, secondly, because rachitis at this period does not seem capable of producing death. Meanwhile it is not rare to see children, who are already enfeebled by a debilitating affection like rachitis, fall victims to other acute intercurrent maladies, such as pneumonia and acute hydrocephalus. The whole difficulty in these cases is to distinguish the symptoms which are proper to rachitis, and which announce it, in the midst of those proper to the intercurrent affection. These symptoms, among other phenomena less marked and less important, are a diarrhœa of long standing, copious nocturnal sweats, an exalted sensibility of the limbs, the repugnance of the children to, and the difficulty they experience in sustaining themselves on the legs; and lastly, a slight swelling of the articulations. I will add, moreover, that it is not infrequent to find in patients whose lower limbs are affected with the characteristic deformities of the second period, the bones of the superior members, the humerus particularly, with the alterations proper to the period of incubation. Here is what these alterations consist in:

When a rachitic bone of the first period is divided into two longitudinal halves, a remarkable quantity of sanguinolent matter is found effused in the medullary canal and at the level of the epiphyses, distending the areolæ of the spongy tissue. This matter is not of a lively red like ordinary blood, but a little deeper. By compressing the cells of the epiphysary extremities the effused liquid flows out in abundance. A more careful examination shows that a certain quantity of this matter exists between the periosteum and the external lamina of the diaphysis, and between the medullary membrane and its internal osseous lamina. A third more important fact is remarked, the presence of the same liquid between several lamellæ of the compact tissue. This last circumstance can be perceived with the naked eye; when examining the surface of the divided bone, a series of more or less continuous, reddish, parallel lines is distinguished, which are due to the overflow of the sanguinolent liquid. This fact becomes more and more appreciable when the periosteum is first removed, then the successive layers of the compact tissue, which are easily enough detached. By this means, one can expose an entire layer of the liquid effused between two lamellæ, and study its characters. At first it is of an aqueous consistence, and may be removed by washing with water, as well as by desication; it seems to be the same between the periosteum and first osseous layer, between the medullary membrane and the internal layer. At a more advanced stage the same substance gives place to a deposit of a gelatiniform matter, which organizes itself after the manner of false membranes, that is to say, myriads of small vessels are discerned in it, intercrossing and forming an inextricable net-work. These vessels may be distinguished when magnified twenty-five diameters only; having reached this degree of organiza-

tion, the effused matter becomes adherent to the surfaces with which it is found in contact, and it is no longer possible to isolate it by means of ablution. The periosteum is manifestly injected and a little thickened; injection pushed into its capillaries developes arborizations there, very numerous, and more sensible than in the healthy bone. The nutritive vessels of the bone are remarkably developed and the effused liquid is particularly abundant at the level of their principal divisions. The medullary membrane is sometimes thickened, but less frequently and less sensibly than the periosteum. The compact tissue of the bones is not yet sensibly softened, still it no longer breaks as easily and as completely as in the healthy state. The concentric lamellæ, already removed from one another by the presence of the effused liquid, can be separated with sufficient ease: dried, they allow a multitude of small openings to be seen, the more marked and more appreciable as the osseous layers approach nearer the periosteum; the areolæ of the spongy tissue are dilated, and a certain number are sometimes found united, as if their partitions had been destroyed by the presence of an excessive quantity of effused matter.

The alterations I have just described belong to the long bones. The tibia, the fibula, the femur, and the bones of the superior members generally exhibit them. Those which are observed in the spongy and short bones are analogous: for instance, in the first stage of the period of incubation, the bones of the pelvis, the scapulæ, and even sometimes the cranial bones, are the seat of a remarkable sanguineous effusion, which distends their cells and enlarges them considerably. It is the same with the bones of the tarsus, carpus, and with the vertebral bodies. Nevertheless the effusion seems

less abundant in the latter than in the long bones and their epiphyses.

Such are the immediate characters of the osseous tissue in the first period of rachitis. These characters may be included in one general fact, namely; a general effusion of blood, made less viscous and less consistent, in all the interstices of the osseous system, which is as it were infiltrated.

2.—*Textural Alterations of the Second Period of Rachitis.*

When the long bones affected with rachitis at the second period, that is to say, offering pretty marked, but recent deformities, are opened, here is what is encountered: towards the epiphyses at their union with the diaphysis, a consistent and elastic spongy substance having very fine, close meshes is perceived, which does not result from a transformation of the ordinary spongy tissue, but is a pathological addition of recent formation, placed either at the exterior of the normal spongy tissue, or in the cells themselves of this tissue, in greater quantity, however, at the point of junction of the epiphysis with the diaphysis. This newly formed tissue is not found only at the extremity of the long bones; its existence is as general as that of the cause from which it takes its origin. I have remarked that towards the end of the first period, the matter effused in all the osseous tissue, particularly that furnished by the periosteum and that deposited between the concentric laminæ of the long bones, presents some traces of organization apparent from the numerous vascular arborizations and the increase of consistence in the effused matter. Well, this rudimentary organization is the first phase of the more advanced ogranization of the same matter, which, whenever it has offered itself during the first

period of rachitis under the form of sanguineous effusion, presents itself in the second period under the appearance of a very fine, spongy tissue, more or less abundant and appreciable, and attains a degree of osseous organization more or less advanced; because it is possible, for reasons that I shall mention by and by, for the same subject to offer simultaneously in the different portions of his skeleton, alterations belonging to several periods of the malady. However that may be, the characteristic type of the alterations of texture peculiar to the second period of rachitis, is the presence of a very fine, spongy tissue in every portion of the skeleton, when the affection exists in a sufficiently intense degree. Thus, the short like the long bones, the flat like the purely spongy, present this new tissue in variable degrees. The pelvic bones, the scapulæ, the clavicles, the sternum, the vertebræ, and also the bones of the cranium, contain quantities more or less considerable of this tissue. Any one may assure himself of this by dividing these bones in the fresh and even in the dry state. In the dead body the section of these bones offers ordinarily a greater thickness than in the normal state. It is distinctly seen that this excess of thickness is only due to the presence of a layer of newly formed spongy tissue, more or less thick, which is ordinarily interposed between the periosteum and the bone. This layer is easily distinguished from the old bone by its meshes, which are finer, denser, less resisting and have not so deep a color. Moreover, it can be removed with the greatest facility. In the dry state the recently formed spongy tissue, to which I have given the name of spongoid, in order to distinguish it from the normal tissue, is preserved under the appearance of a contracted layer, of a yellow color, contrasting with the natural color of the bone. This, however, is chiefly discernible in the diaphysis of the long bones.

I have shown that in the period of incubation the effusion took place between the periosteum and the surface of the bone, between the medullary membrane and the internal osseous layer, and lastly, between the laminæ of the compact tissue, which are divided and exfoliated in some measure; now, the spongy transformation is still more sensible there than at the level of the epiphyses and in the flat and short bones. This newly formed matter is occasionally so abundant that it produces a separation several lines wide between the periosteum and bone, and by means of the unfolding of the lamellæ of the compact tissue, forces the latter back towards the medullary canal, which is considerably lessened, and now and then is entirely obliterated. This peculiarity is remarked particularly when the bones are curved, and is observed on the concave side of the curvatures, whilst on the convex side the laminæ of the compact tissue continue to be closely joined, and the periosteum to be applied immediately upon the bone. This difference between the two sides of the curvature relatively to the presence of the spongoid tissue, seems to be owing to the fact that the effused matter not having been able to make a lodgement between the osseous laminæ and the periosteum of the convex side, has been forced from the compression of the plates of convexity to flow back between the laminæ and periosteum corresponding to the concavity. There, indeed, this matter has been able to accumulate without obstacle, and to be replaced by the spongoid tissue. Sometimes a lamina three or four lines thick is found between the periosteum and the bone. In this case the former is the seat of a very unusual vascularity, as in the preceding period, and has acquired a consistence and density sensibly exalted. One cannot better assure himself of this than by comparing the periosteum of the two sides of the curvature.

On the convex side it retains nearly the normal conditions; upon the concave side it is evidently hypertrophied, and the spongoid matter deposited at its surface is with difficulty separated. This disposition is present to an unusual degree at the level of the angular curvatures offered by certain long bones, such as the humerus, the femur, &c.

At the same time that the effused matter acquires the characters that I have indicated, the osseous tissue, properly so called, offers some modifications of consistence and structure which it is not less important to describe.

The long bones are bent pretty easily without breaking; sometimes even muscular action suffices to bend them. The flat bones, like those of the cranium and pelvis, suffer themselves to be depressed with the thumb; but for this depression to be possible, the rachitis must have been carried to a very marked degree. A cutting instrument divides them as a somewhat firm cartilage: when fractures accidentally take place in the long bones, they are never complete; a part of the diaphysis has simply bent, at the same time presenting in the longitudinal direction some incomplete fissures. These are the most obvious facts; but they are already sufficient to show that the proper osseous tissue has undergone a certain degree of true softening. By proceeding farther into the examination of the contexture and consistence of the bones, other proofs of this softening are obtained. For instance, the plates that are unfolded and isolated may be reduced to filaments which are twisted and bent in every direction without breaking. Torsion and compression somewhat firm, causes a sanguinolent liquid to escape. When these fragments of lamellæ are placed under the microscope a multitude of small reddish points are perceived dotting, so to speak, the osseous substance itself. These points are particularly

appreciable in the most superficial plates of the concave side of the curvature. Lastly, when the compact laminæ, and even the entire bones are dried, then are perceived in the points corresponding to the concavity of the curvatures principally, a multitude of small holes, some of which attest, by their exaggerated development, the proportionate development of the small vessels to which they gave passage.

All these changes that give evidence of an alteration in the consistence of the osseous tissue, properly so called, are not remarked in the long bones solely. In the flat and short bones the external table offers some analogous modifications. As I have already said it gives way to the pressure of the fingers, and is cut with the greatest ease. Sometimes it is rendered considerably thinner by the removal of the internal laminæ. There is no doubt then, that, independently of the formation of a new tissue, the spongoid, characterizing the second period of rachitis, the proper osseous tissue undergoes in this period a true softening.

As it respects the changes of structure, they are not less real, but they are a little different, according to certain conditions which it is important to determine. In the most ordinary cases, the separation of the laminæ by the newly organized rachitic effusion, is the sole operation observed during the second period of rachitis. This separation is a mechanical one, and not the result of an interstitial absorption of the osseous tissue; for the spaces resulting from it are nearly always exactly concentric, and they correspond besides to the separation observed during the first period, when a layer of liquid alone is interposed between these laminæ. There is, therefore, in ordinary cases only a simple unfolding of the concentric layers of the diaphysis, without absorption or interlaminar destruction. At a more decided stage, that is

when the effusion has been considerable either at the surface of the bone, between the periosteum and first layer, or between the concentric layers, the texture of the bone proper may offer two kinds of changes. Either the laminæ have been considerably removed from one another and their vascular communications broken and interrupted, in which case the osseous laminæ may detach themselves from the principal layer, fall down in detritus, and constitute a peculiar mode of being of rachitic bones that I have designated and described, as will be seen farther on, under the name of *rachitic consumption;* or else the abundance of spongoid matter deposited at the surface of the concavity of the base forced back the laminæ of the bone proper into the medullary canal, and the laminæ offer a more or less complete solution of continuity at a level with the centre of the effusion, or otherwise only an angular curvature of the bone, whence, in either case, may result an extreme curvature, and also an appearance of incomplete fracture. These modifications are not absolute; on the contrary, they are dependent on some special conditions; and express in no case the general fact of the destruction and disappearance of the proper osseous tissue in the second period of rachitis; the latter result never exists but incompletely and in an accidental manner, and is joined to an extreme degree of the malady, which degree is expressed, as will be seen hereafter, by some consecutive alterations which are completely independent of the most frequent general characters of the rachitic osseous tissue.

3.—*Alterations of Texture of the Third Period of Rachitis.*

As the general symptoms of rachitis are dissipated and announce the period of resolution, the osseous tissue follows in

its phases an analogous progression and transformation. The spongoid tissue of the epiphyses is in part absorbed, and the remaining portion acquires some consistence and loses some of its flexibility; the liquid which bathed it disappears more and more, its meshes enlarge and solidify. In the body of the bone other changes occur: the interstices resulting from the disunion of the laminæ are filled by true deposits of phosphate of lime. By degrees the lines of separation are effaced, the layer of spongoid tissue which was organized between the periosteum and the bone, and between the medullary membrane and the internal surface of the bone, is transformed successively into compact tissue, and the whole osseous frame-work of the diaphysis offers very soon the homogeneous aspect of the primitive bone. This transformation can be followed with the naked eye in the easiest manner. The interstices of the lamellæ by degrees fill up and contract; the fissures which are at first perceived on the edge of the divided bone very soon offer only some very slender linear appearances betrayed by the reddish color of the spongoid tissue of which some hardly perceptible traces only remain. Lastly, in proportion as the new layers acquire the character and consistence of the compact tissue, this resumes its normal primitive solidity, and even in the end attains an extraordinary hardness and compactness. I have designated this state by the name of *eburnation*, because in fact the rachitic bones offer at this period the aspect and hardness of ivory, and it is impossible, whatever force one employs, to overcome the curvatures without fracturing the bones. This transformation is completed some years after the disappearance of the acute symptoms of rachitis, being the more perfect in proportion to the age of the subject, and vigor of the constitution.

Lastly, in proportion as the period of resolution is accomplished, the large bones which were very crooked, particularly the tibiæ and fibulæ, become flat, and approach the figure of a curved sabre blade. When they are divided longitudinally at this period, nearly an inch of compact bone is sometimes found between the concave border of the bone and the medullary canal. This increase in the breadth of the compact part evidently results from the transformation of the originally spongoid layers of the rachitic bone, confounded with the layers of the old bone. The traces of this effusion can be often recognized by one or more longitudinal lines.

The changes which are brought about during the third period of rachitis, in the flat and short or spongy bones are less remarkable and less absolute. Sometimes the flat bones grow very heavy, hard, and compact, and the spongoid tissue has evidently furnished them the elements of this hyperostosis. The coccygeal bones, for instance, sometimes become of a considerable thickness and hardness. I have observed one pelvis, among others, very curious in this respect, which was shown to me by M. Legrand of La Maternité. It weighed twice as much at least as an ordinary pelvis, and its walls had acquired, in some places, a thickness and compactness triple or quadruple what occur in the natural state. The bones of the cranium also very frequently present the same development: I have seen and described several examples in which the parietal bones particularly had triple the usual thickness. When the cranium of subjects who are in this condition is divided, a multitude of small, reddish, sand-like granulations, very dense and very close, are perceived, which still retain something of the characters of the spongoid tissue. The whole of the diplœ is invaded by these granulations, and the

entire bone is of remarkable hardness and weight. In the bones entirely spongy, such as the vertebral bodies and the tarsal bones, the characters of the period of resolution also offer some distinct appearances. Their volume does not generally remain augmented, and indeed rarely continues so; but their surface is unequal and rough, and marked with alternate depressions and saliences, which betray an ancient alteration of the consistence of their tissue. Above all the vertebræ are remarkable in this respect; their free surfaces are indented or depressed; one might say that they had been swollen for a moment, and obliged to fall back on themselves by the disappearance or absorption of the matter they contained, that they had sunk and contracted in order to fill the spaces left, and adapt themselves to their actual contents. In all these cases, they are flattened anteriorly or upon the sides to a considerable degree. As to their consistence, it is generally greater: it is frequently almost impossible to divide the bodies of the vertebræ that have been affected with rachitis at a former period. Their compact substance is hypertrophied and formed of a crust of very hard phosphate of lime.

The periosteum in this period is strongly adherent to the bone; it has become again what it was; it is neither thicker nor more injected than in the healthy state, unless upon the concave side where it sometimes preserves a firmer consistence.

Such are the alterations of texture observed during the three periods of rachitis in the young subject, and which constitute the immediate characters of the *recent* affection.

6.— *Texture of the Bones in Long-Standing or Chronic Rachitis.*

The texture of the bones in rachitis of long-standing appears under two distinct conditions, according as the disease

is completely resolved, leaving no other traces than the deformity of the skeleton, or as the texture of the bones offers some alterations which have persisted after the disappearance of the symptoms of acute rachitis. In the first case, that is, when the disease has ceased for a long time, leaving no other alteration than the distortion of the skeleton, the texture of the bones continues to be what I described it in the third period of rachitis under the name of *eburnation.* The texture of the diaphyses has acquired, in fact, the hardness and density of ivory; all the compact portion of the long bones offers, notwithstanding the very striking curvatures, a homogeniety and compactness which are but the complement of the state that I ascribed to the third period of recent or acute rachitis. The only difference between the old and recent eburnation consists in the rarefaction of certain parts of the osseous tissue. In fact, old rachitic bones perfectly consolidated, present at the level of their epiphyses and in the areolar portion of their diaphyses, large cells which demonstrate the absorption of certain parts, and, furthermore, the diaphysis of the long bones that remain crooked is flattened, as if fallen back upon itself. Save this difference, the ancient eburnation offers the finished characters of the recent, that is to say, the ivory-like portion of the diaphysis, especially that which answers to the concavity of the curvatures, is of an excessive hardness, so much so as to be with difficulty divided with the saw.

When the resolution of the malady has not been complete on account of its intensity, and when, in consequence of a very considerable effusion there has been a separation and detachment of the lamellæ of the compact tissue and excessive dilatation of the areolæ of the spongy tissue, the osseous tissue passes, as I have said, into the state of *rachitic con-*

sumption. In this condition, the external layer of the bone, particularly that of the epiphyses and flat bones, is reduced to a very thin, transparent, fragile lamina, yielding to the slightest pressure of the fingers.

The whole space circumscribed by this osseous shell is occupied by large cells which might be said to result from several areolæ united, and in which float more or less freely some remains of the lost lamellæ in the midst of greasy, yellowish marrow, shaded in some places by reddish plates. These cells do not occupy the spongy bones solely, and the extremities of the long bones; they invade the medullary canal of the latter; they are filled, moreover, with fat, and sometimes with particles of lamellæ or with entire isolated lamellæ, which do not appear to have any adhesion with the diaphysis. When these bones are dried, they are reduced to a very thin envelope, semi-transparent and extremely fragile, though bathed almost in an oily matter. The lamellæ which were immersed in the medullary tissue, become free, as if half rolled up, extremely thin and fragile. They appear to have only some imperfect adhesions with the compact tissue. This alteration is not always so striking or so general: frequently the epiphyses alone are affected, and the middle portion of the diaphysis is rendered hard and compact, like ivory; at other times the epiphysis and diaphysis present it simultaneously in a high degree, and a very small effort is sufficient to fracture the bone. According to these two cases, the bones are affected with *complete*, or *incomplete rachitic consumption*.

The mechanism of rachitic consumption seems to me very simple, and consists entirely in a considerable separation of the osseous laminæ to the extent of interrupting their vascular communications, and producing more or less completely the death of the parts. This mode of formation of rachitic

consumption can be distinctly verified during the first period of acute or recent rachitis. The bones of young subjects affected with rachitis to this degree present a remarkable exfoliation of their tissue, so that the cortical layer of all the bones is reduced to a simple pellicle. I have several skeletons of young subjects in which this exfoliation of the compact tissue is evident. One may conceive that the parts thus violently disjoined cannot, when the malady subsides, reunite, and that the rachitic effusion, unprovided with vascular communications, cannot organize itself and assume successively the characters of the osseous tissue, without the elements which should come from the periosteum or the medullay membrane.

Such are my observations touching the different alterations of texture proper to the different phases of rachitis; they may be thus recapitulated:

1. The texture of rachitic bones offers characters altogether different according as they are observed during the period of *incubation*, *of deformity*, *or of resolution*, varying at the *commencement and the end* of each of these periods, and, lastly, according to the degree of antiquity of the affection.

2. During the period of incubation an effusion of sanguinolent matter occurs in all the interstices of the osseous tissue, in the cells of the spongy tissue, the medullary canal, between the periosteum and the bone, between the concentric lamellæ of the diaphysis, between the epiphyses and diaphyses, between the epiphysary nuclei and their cellules, in the short and the flat as well as in the long bones, in a word, in every portion of the skeleton, and every point of the osseous tissue where the radicles of the nutritive vessels are distributed. From this effusion come the exfoliation of the component parts of the

tissue, and the swelling and enlargement of the different portions of the skeleton.

3. During the second period of rachitis, that of deformity, at the same time that the osseous frame-work loses its consistence and grows soft, the matter which continues to be deposited in all the interstices of the bony tissue, has at endency to organize; it passes successively from the cellulo-vascular to the cellulo-spongy state. This newly formed matter is particularly abundant between the periosteum and the bone, the medullary membrane and the canal, the periosteum and external table of the flat bones, and between the plates of the latter.

4. During the third period, that of resolution, the recently formed tissue in the long bones, and in some of the flat and short ones, passes to the state of compact tissue, and tends to confound itself with the old tissue which recovers its former hardness. This addition of a new tissue to the old one gives a very great thickness, and especially a very great breadth, to some parts of the bones which had been the seat of the organization of the spongy tissue of the preceding period.

5. In the state which I have designated under the name of rachitic consumption, and which results from an exaggerated degree of the affection, the unfolding and the separation of the component parts of the osseous tissue have been such that their re-union is not effected, and the organization of the effused matter does not take place. In this state the partitions and the osseous lamellæ are left separated, and the consistence of the primitive bone has been reduced so much that the external layer is sometimes formed by a thin pellicle only.

6. The texture of rachitic bones among adults, when the affection is completely resolved, offers a compactness and a hardness superior to those of the normal state. In this state

which I call that of rachitic eburnation, no trace of the union of the elements of the old with those of the new bone can any longer be distinguished.

c.—*Influence of Rachitis upon the Progress of Ossification.*

The authors who have occupied themselves with the question, whether rachitis exercised any influence whatever upon the progress of ossification, have frequently decided it in a contradictory manner: some have said that the work of ossification had seemed to them to continue as under ordinary circumstances, others that the softening itself of the osseous tissue was a condition that necessarily retarded its consolidation; this diversity of opinion is owing to a want of precise observation, and arises from investigations made under different circumstances.

The appreciation of the influence of rachitis upon the progress of ossification can arise, then, in a complete manner only from an examination of the osseous tissue in the different periods of the malady, and at greater or less distances from its invasion; moreover, the facts which express this influence are not all of the same order; they belong to distinct categories: some relate to the state of ossification, properly so called, that is, to the transformation of the cartilaginous tissue into the osseous; others to the mode of junction of the epiphyses, and to the degree of soldering of the parts originally separate and distinct.

Respecting the work of ossification, properly so called, it seems difficult at first view, confining oneself solely to the external phenomena, to distinguish what is the effect of the delay of ossification from what belongs to morbid softening. For instance, the sternum and ribs are seen to preserve such a sup

pleness and elasticity during the existence of rachitis that they can be indented with the fingers with the greatest ease. It happens even that the sternum may bend double and form a curvature re-entering from above downwards. Are these results owing to a morbid softening, or rather to the effect of a delay in the ossification? I think that they are ascribable at once to both of these causes. To be convinced of this it is sufficient to compare the state of the osseous tissue in rachitic subjects with that of healthy persons of the same age. This inspection has shown me that in rachitic individuals during the second period and at the commencement of the third, a greater number of filaments or cartilaginous nuclei are distinguished in the midst of the proper osseous tissue. The cartilaginous filaments are perceived more easily in the vertebral bodies, the cartilaginous nuclei in the epiphyses. The latter present themselves under the form of small rounded bodies separated from the principal nucleus, and lost as it were in the spongy substance; their color is less distinct being slightly bluish; they are, moreover, rather slightly united to the spongy substance; when detached with the point of the scalpel they have in the place they occupied an excavation analogous to that left by tubercles of the bones. In regard to the mode and degree of union of the epiphyses with the diaphysis of the long bones, there is from all the evidence a marked delay in rachitic individuals. The divulsion of the epiphyses is effected with the greatest facility, and effused blood is found, during the first period of rachitis, at the point of union between the epiphysis and diaphysis, like what is found between the periosteum and the compact tissue of the diaphysis. This phenomenon becomes very sensible when a rachitic skeleton is dried; all the epiphyses of the bones of the extremities come off from the diaphysis with the

utmost ease. This disposition accounts well for the coming off of the epiphyses, which several authors say they have observed following certain eruptive diseases: now it is known that in these circumstances the blood has often lost its plasticity, and that it is under the influence of the same circumstances, as I shall demonstrate by and by, that rachitis is developed.

Lastly, some analogous effects are remarked in the bones originally composed of distinct pieces, such as the sternum, the os coccygis, &c.; the pieces of these bones appear to unite more slowly than in the healthy state. Those of the sternum, for example, show this effect in a very high degree. Mostly the different portions of which it is composed remain divided, and the separation is perpetuated during life. One can assure himself of this fact on nearly all the skeletons of adults who offer marks of a very high degree of rachitis. The result of this separation is an anormal projection of the sternum at the point of union of the portions composing it. The same effect may again be observed on the os coccygis, but in a less striking manner, because the ossification of its several portions is accomplished much later. Yet in their degree of disjunction and the facility with which they are separated, it is impossible not to recognize one of the results of the influence of rachitis.

The final or collective result furnished by these two orders of facts, namely, the persistance of a more marked number of cartilaginous nuclei, the separation of the epiphyses, and the more tardy union of the portions composing the multiple bones, show, without any doubt, a delay in the work of ossification.

Such is the series of facts constituting the purely anatomical history of rachitis. The greatest part of them are

new, and the result of my own researches: some of their elements have been indicated, but indicated only, and in a more or less incomplete manner, by those who have preceded me. Among these I will cite particularly Bichat, Lévillé, Stanley, Geursant, Rufz, and Dugés, the only ones who have published any observations deserving attention on the pathological anatomy of rachitis. Bichat, for instance, has noticed in the middle portion of the long bones in rachitic individuals an osseous areolar-like tissue, which he considers, however, as resulting from the extension and separation of the osseous fibres.* Léveillé is of the same opinion. We are indebted to Rufz for some observations much more precise and detailed.† This author has remarked the lamellar disposition of the long bones and the presence of a reddish medullary substance deposited between each of these lamellæ, as well as between the cells of the spongy substance, and the enlargement of the epiphyses by the presence of a newly formed spongy tissue. But besides that he does not appear to have conjectured the connection of these alterations and the other transformations anterior and posterior, corresponding to the different periods of the malady, he has circumscribed in these two facts, considered absolutely, all the alterations of texture of rachitic bones, forgetting that such of the alterations as he had noticed in a single point of the long bones, namely, the existence of a new spongy tissue at the union of the epiphyses with the diaphysis, is a general fact, that is found in every part of the skeleton, at the surface and in the interior of the long bones throughout their entire length, at the surface of the flat bones as well as between the laminæ of

* Bichat, Anatomie Générale, edit. by Chaudé, t. iii. p. 31.

† Gazette Médicale, 1834, pp. 68, 69.

their table; in every place, in a word, where I have desbribed it, as a consequence of an alteration of ossification, as succeeding to the general effusion of the first period of rachitis, and as becoming the ground-work of supplementary ossification of the long, and sometimes of the flat bones.

An English author, Stanley, has published some remarks upon the state which the long bones, affected with rachitis, present towards the termination of this affection, and whilst showing the usual development of the compact tissue at the concavity of the curvations, he attributes this development, like M. Rufz,* to hypertrophy of the normal tissue, without referring this transformation of the osseous tissue to the anormal phases preceding it.† Lastly, M. Dugés, has adopted and confirmed, in part, the researches of Rufz and Stanley. But any one may see, that these authors have all perceived but one or more isolated points of the pathological anatomy of rachitis, without having a glimpse of the origin, the connection, and the order of succesion that these phenomena have with each other; without even recognizing the actual universality of the facts of which they have remarked some local manifestations. Now the character of true observation is not solely to verify some peculiarities of phenomena, to perceive them in one point of their extent, but to seize them in their totality, to show their origin, their mode of evolution, of succession and of association, to follow them in their succession

* Loc. cit.

† The English author, moreover, considers the enlargement of rachitic bones at the level of their ancient curvations, as resulting from the provision of nature, which endeavors to fortify the parts having the most efforts to bear. "Thus," says Stanley, "it is evident that in the crooked bone, the place where there is most need for strength to prevent it from giving way more is the middle of its concavity, and it is in this situation that the bone will receive some strength and compactness by the deposition of phosphate of lime." (*Medico-Chir. Trans.* vol. viii. p. 104.)

and their relations, to point out, in a word, their signification and respective importance; were it not for this, the least practised eye might perceive one or several isolated points of the most beautiful discoveries, one or more links of the chain which runs back to the point of departure, that is to say, to the cause: but he would discern only these separate links, and would not lay hold of their connections with those that precede or follow them, and, above all, would not attain to the general signification of the facts of which he could embrace only a few material circumstances.

Sec. IV.—*Diagnosis of Rachitis.*

After having made known in detail the characters of genuine rachitis, considered in its general phenomena and in each of its particular elements, I have still, in order to complete the description of this malady, to compare it with the morbid forms to which the same denomination has improperly been given. The contrast that must result from this comparison will have the effect, I trust, of destroying the surperficial analogies which have been traditionally admitted.

The diseases with which rachitis has for a long time been confounded are most of the *deformities of the spine, the tuberculous affection of the bones, and the osteomalacia of different species.*

The spinal deformities improperly ascribed to rachitis are all lateral deviations, of whatever nature they may be, and the excurvations, particularly those of the tuberculous kind. This confusion would appear no longer possible, particularly with respect to tuberculous affections of the vertebral column; nevertheless, it still exists even in the most recent works. Thus, in a treatise on the diseases of the spinal marrow, the

terms *caries of the vertebral column*, *Pott's disease*, and *rachitis*, are indifferently employed to designate the same malady. It will not be superfluous, therefore, to describe these vexatious synonymes.

The lateral deviations of the spine will no longer be attributed exclusively to rachitis, because the greatest part of these deformities are the result of other well established causes, and because true rachitis, pretty rare withal, especially in the wealthier classes, is accompanied by circumstances and characters which make it easily understood. It is sufficient to call to mind that every rachitic deformity of the spine has necessarily been preceded by some general symptoms of rachitis, and particularly by deformities of the inferior members. Consequently every deformity of the spine wanting this accompaniment, in an immense majority of cases at least, is not of a rachitic nature, and cannot be confounded with rachitis. In a particular memoir upon rachitic deviations of the spine, I shall specify the characters peculiar to that species of deviation. Let us add that the osseous tissue of the spinal columns affected with lateral deviations without the external characters which I have just recalled, never presents the modifications of texture so characteristic of rachitis. The vertebræ offer no other alterations than those resulting from their changes of relation, and from the irregular mechanical efforts to which they are subjected, comprehending in these the influence of the degree and of the duration of action of these influences, and that more general one of the deformity of the spine upon the organism, and the effect of this reaction upon the ensemble of the osseous tissue.

Tuberculous excavations and the tuberculous affection of the bones will no longer be referred to, and confounded with

rachitis. The tuberculous affection of the bones and rachitis are, in fact, two essentially distinct diseases which are encountered sometimes in the same subject, but have very different causes, symptoms, and anatomical characters, as well as very different general physiognomy. Tuberculous excurvations are never preceded or accompanied by deformities of the inferior members, unless true rachitis itself has existed, which I have sometimes seen. But the simultaneous occurrence of two different affections so easy to distinguish does not imply an identity in their nature; and their peculiar characters, though existing simultaneously in the same individual, can be recognised as if they existed separately. There is no necessity of my setting forth the contrasts resulting from the age of invasion, from the progress, or from the treatment of these two diseases. I shall limit myself to recalling the most prominent characters of the osseous tissue in the tuberculous affections which bring in their train certain deformities of the spine. Now, the bones seized with the tuberculous affection are nearly always the spongy bones, or the extremity of the long bones. The affection is never announced with a character of generality like rachitis; it shows itself, on the contrary, in certain circumscribed points of the skeleton, and the parts affected by it, as the vertebræ and epiphyses of the long bones, never offer the succession of phases so distinct of the rachitic alterations; finally, the tubercles, which have been justly regarded as parasitic bodies, invade successively the different portions of the bone where they are developed, destroying them rather mechanically than chemically, and leaving often to the preserved portions of this tissue, but adjoining the altered points, all their hardness, and all the dispositions of their primitive texture. Any one may easily convince himself of this fact by washing in a

large quantity of water some vertebræ riddled with tubercles: the remaining portions offer very nearly the characters of the most healthy tissue. It might appear no longer necessary to mention these peculiarities for those who follow closely the progress of the science; but besides that they are too little known by the greater number, I have some reasons for establishing, with all possible precision, that rachitis is anatomically wholly different from the tuberculous affection of the bones: for, in my experiments upon the production of spontaneous rachitis in animals, it has happened to me to have apparently very little change to make in order to produce the one or the other of these two affections.

With more appearance of reason the various species of softening of the osseous tissue in adults have been confounded with rachitis exclusively proper to children; since the history of Mad. Supiot the denomination of rachitis has even been retained for them. That which more than any thing else has tended to perpetuate this error, is that the best authors who have described rachitis, as Glisson, have not entirely escaped the confusion of terms. It is proved to my satisfaction, however, that these two orders of diseases, the softening of the osseous tissue in adults, and rachitis as I have described it, can no longer be attributed to the same cause, that they offer neither the same characters, nor the same symptoms.

I have already shown that true rachitis is a disease of infancy, being observed chiefly towards the age of eighteen months or two years; that it is characterized by a mode of invasion, a course, periods and alterations of texture altogether peculiar; now in the different species of softening, observed in adults, like that of which the woman Supiot offers a very beautiful example, there is no analogy between these various terms of comparison. Although it is not my

intention to insist here upon the detailed history of softening of the bones among adults, which I propose to do shortly, it will be sufficient for me to call to mind the principal circumstances of the malady in order to prevent all ulterior confusion.

The softening of the bones in adults to which I restrict the term *osteomalacia*, is the result of specific causes, such as scurvy, syphilis, rheumatism, or of some particular vice, as the cancerous: every individual who has offered it, had presented, prior to the commencement of the softening, the general symptoms of these alterations. It is announced by lively and deep-seated pains in the bones; the progress of the malady is slow; it endures for a great many years, sometimes for 20 years; it does not declare itself simultaneously in every portion of the skeleton, nor from below upwards, but it attacks it by fractions only, so that when an individual is examined who presents it in a degree as yet but little advanced, some bones are found affected singly, and even portions of bone altogether softened at the side of other portions of the same bone retaining their normal resistance and texture. I have in my possession several examples of this partial softening observed in persons dying with cancers of the stomach, breast, or uterus. I shall make them known hereafter in detail. If the nature of the alteration of the tissue be examined closely, this inspection alone will convince any one that osteomalacia and rachitis are two essentially different affections. In the one, the osseous tissue is truly softened, as if carnified in places, and no longer retains any thing of the consistence or of the texture of the healthy bone; it is as if one had poured upon the seat of the softening a very powerful liquid, having the property of causing immediately every trace of calcareous salts to disappear, so as to leave nothing

but a fibro-cartilaginous or even fleshy net-work, presenting here and there layers of areolæ like the venous sinuses of the liver; this net-work is sometimes yellow or rosy, sometimes reddish, or of the color of wine-lees, always elastic, very easily cut with the knife, but sometimes incrusted as it were with some other portions of the sound tissue. This circumscribed state of the disease is far from being constant; at a more advanced period, it often happens that the skeleton partakes of the softening, and, as is seen from reported observations of authors, there no longer remains any appearance of the primitive organization of the bones. The termination of the osteomalacia, which is always unfortunate, adds another to the distinguishing traits between it and rachitis.

It will be seen, therefore, that the deformities of the vertebral column, considered in an essential manner, tuberculous excurvations of that portion, or the tubercular affection of the bones, and osteomalacia, constitute affections entirely different from rachitis, and which will not henceforth be confounded with it.

Sec. V.—*General Summary and Conclusions.*

The researches contained in this memoir may be recapitulated as follows:

1. Rachitis is a general affection of infancy, characterized by the alteration or perversion, and also the suspension of the process of development and of reparation of the organism, and particularly of the osseous system.

2. The progress of rachitis, considered as an affection of the skeleton, comprises three distinct periods: first, the period of *incubation* or of *effusion;* second, that of *deformity;* and

third, that of *resolution* or *eburnation;* to each of these periods correspond some peculiar general symptoms, and some peculiar alterations of the osseous tissue.

3. The influence of rachitis upon the osseous tissue is revealed by four distinct orders of facts: first, the *deformity;* second, the *alteration of tissue;* third, the *arrest of development;* and fourth, the *delay of ossification.*

4. The rachitic deformity of the skeleton is developed successively from below upwards, from the bones of the leg to the thigh bones, from these to the pelvis; then come successively or simultaneously the different portions of the superior limbs, the thorax, and, in the last place, the vertebral column and the cranium.

The degree of the deformities is in relation with their order of development; whence it follows that the rachitic deformity of one portion of the skeleton always implies that of the portions situated below.

5. Most of the bones of the rachitic skeleton are always relatively less developed in length and breadth than those of the healthy skeleton; this shortening which is independent of that resulting from the deformities is effected according to the same laws; that is to say, successively from below upwards, and gradually from above downwards. The proportion according to which all these parts of the skeleton are reduced from below upwards is expressed by a regular series of numbers, which permits us from the dimensions of a single bone to deduce approximately that of the other portions of the skeleton.

6. The greatest reduction of the inferior compared to that of the superior members establishes between these parts relations of length, which repeat and perpetuate those of the age at which the malady is developed.

7. The shortening of the bones considered in rachitic

adults is a result composed of the arrest of development of the osseous system under the direct influence of the disease, and of the consecutive slowness of its increase subsequent to the disease.

8. The texture of rachitic bones presents entirely different characters according as they are observed during the period of *incubation*, *deformity*, or that of *resolution;* they differ at the beginning and the end of each of these periods, and are different, lastly, according to the *degrees* and the *age* of the affection.

9. During the period of incubation an effusion of sanguinolent matter occurs in all the interstices of the osseous tissue, the cells of the spongy tissue, the medullary canal, between the periosteum and the bone, the concentric lamellæ of the diaphyses, the epiphyses and the diaphyses, the epiphysary nuclei and their cells, in the short and the flat, as well as in the long bones; in a word, in every part of the skeleton, and all the points of the osseous tissue to which the radicles of the nutrient vessels are distributed. From this effusion result the exfoliation of the parts composing the tissue, and the swelling and enlargement of the different portions of the skeleton.

10. During the second period, that of deformity, at the same time that the frame-work of the osseous tissue is losing its consistence and growing soft, the matter which continues to be deposited in all the interstices of this tissue tends to organization: it passes successively from the cellulo-vascular to the cellulo-spongy form. This newly formed matter is particularly abundant between the periosteum and bone, the medullary membrane and the canal, the periosteum and external table of the flat bones, and between the plates of the latter.

11. During the third period, that of resolution, the newly formed tissue in the long, and in some of the short and flat bones, passes into the condition of the compact tissue, and has a tendency to confound itself with the old tissue, which retains its primary hardness. This addition of a new to the ancient tissue gives a very great increase of thickness, and especially of width to some parts of the bones which had been the seat of the organization of the new spongy tissue of the preceding period.

12. In the state I have designated under the name of *rachitic consumption*, and which results from an exaggerated degree of the affection, the unfolding and the separation of the parts composing the osseous tissue, are so great that their reunion has not been effected, nor the organization of the effused matter taken place. In this conditition the partitions and osseous lamellæ have continued separate, and the consistence of the primitive bone has been so much reduced that its external layer is formed sometimes by nothing more than a thin pellicle.

13. The texture of the rachitic bones in adults when the disease has been completely dissipated presents a compactness and hardness superior to that of the healthy state. In this state, which I call *rachitic eburnation*, one can no longer discern any trace of the union of the elements of the old with those of the new bone.

14. The deformities of the spine, which happen towards the age of puberty, and all those which have not been preceded by deformities of the inferior limbs are not of a rachitic nature.

15. Rachitis is an affection essentially different from *scrofula*, or from the *tnberculous* affection of the bones, as well as from every species of *softening of the bones observed in adults;* for these latter affections the denomination of *osteomalacia* must be exclusively reserved.

Selections from American and Foreign Journals.

Cases of Poisoning by Arsenic—Treated by the Hydrated Peroxide of Iron. By T. T. Smiley, M. D., and J. M. Wallace, M. D.

On the 3d day of January, 1840, the family of Mr. Constant Gigon, residing at No. 148 Pine street, Philadelphia, was poisoned by eating a pudding made of Indian meal, in which arsenic had been mixed, probably for the purpose of destroying rats. The precise quantity of arsenic contained in the pudding could not be ascertained; but, judging by the effects produced, must have been very great. The whole family, consisting of eight persons, was affected with symptoms more or less violent. An hour after the pudding had been eaten, on finding a general sickness prevailing in the family, a dose of ipecacuanha had been administered to each of the individuals affected, by Mr. Zollickoffer, an apothecary residing in the neighbourhood.

On the arrival of Dr. Smiley, who was first called in, poisoning from arsenic was at once suspected,—and on that supposition copious drafts of warm water, with sweet oil, were administered, and followed by whites of eggs in large quantities.

During the operation of the foregoing remedies, given with a view to evacuate the stomach, and remove the poison as thoroughly as possible, Mr. Zollickoffer was requested to prepare a large quantity of the hydrated peroxide of iron, for the purpose of being administered as an antidote to that portion of arsenic which always in such cases remains in the stomach, and cannot be entirely evacuated by vomiting.

As soon as the hydrated peroxide of iron could be prepared, it was administered in tablespoonfull doses, at short intervals,

to all the patients, and as often as rejected by vomiting, was immediately repeated In nearly all the patients an almost entire subsidence of the most violent symptoms soon followed, and the burning sensation of the œsophagus and stomach greatly diminished. The result of the subsequent treatment will appear by the following detail of each particular case.

1. Constant Gigon, aged thirty years, slender frame and delicate constitution. Symptoms—extremities cold; pulse at the wrist scarcely perceptible; extreme anxiety of countenance; constant vomiting, with great thirst, and violent pain in the epigastrium, increased by pressure; spasms in the lower extremities; no priapism or purging; intellect perfectly clear; tongue covered with a thick white fur, through which the red papillæ stood prominently, very much resembling the appearance of the tongue in severe cases of scarlatina. The hydrated peroxide of iron could not be retained by the stomach more than a few minutes. Ammon. carb. in mucil., with brandy, appeared to check the vomiting; but when the hydrated peroxide of iron was again given, it was immediately rejected. Brandy enemata were ordered every hour. Sinapisms over the stomach, and frictions, with capsicum and brandy; warm bricks kept constantly to the feet. The heat acted only as it would have done on a dead body. No reaction took place, and the patient died about seven hours after eating the poisoned pudding. His intellect was clear to the last moment, and for a short time before his death he complained only of being cold. No evacuation from the bowels at any time.

Autopsy sixteen hours after death.—Present, Drs. Peace, Pepper, and Kirkbride. All the muscles were very firmly contracted, though the body had been kept in a warm room. There was not the slightest relaxation of the walls of the abdomen, which were drawn inward and so elastic as to feel stretched like the head of a drum. The stomach and duodenum were first removed, with a ligature applied to each orifice to retain the contents. On being opened the stomach was found to contain nearly a pint of a brown viscid fluid, which was reserved for chemical examination. The whole mucous membrane was injected, and of a bright scarlet color, with effusion of lymph in some parts. No ulceration. On attempting to detach strips, the stomach was found thickened and *softened* for the space of three inches round the pylorus. The mucous follicles enlarged. Several bright patches, from an inch to two inches in diameter, formed round a central point of irritation. Around the pylorus also were several ecchymosed spots, from half an inch to an inch in diameter,

and a few white points on the mucous membrane. The duodenum was injected only for an inch or two beyond the pylorus, but in a much less degree than the stomach. The mucous membrane of the fauces and œsophagus was considerably injected. The other intestines in a perfectly healthy state.

2. Madeline Cetter, aged twenty-four years, symptoms at first less severe than the above. Afterwards incessant vomiting came on. The hydrated peroxide of iron could not be retained on the stomach, and the slightest portion of any fluid excited vomiting. About six hours after being poisoned, her intellect became torpid, so that she could with difficulty be roused. When disturbed was exceedingly restless, and complained of constant burning in the epigastrium. Brandy enemata, frictions, warmth, &c., failed to produce reaction, and the patient died nine hours after being poisoned.

Autopsy thirteen hours after death.—The same powerful contraction of the muscular system as in the foregoing case. The stomach contained half a pint of yellowish, turbid fluid. The mucous membrane much less injected than in case first, though near the pylorus there was a spot two inches square, intensely scarlet, and very minutely injected. Several small spots, similar in appearance, and from two to three lines in extent, were found in other places. The large veins can be seen through the membrane very much distended. The duodenum, and other intestines, not in the least affected.

3. Maria M. Carter, aged fifty-four years, very feeble; tongue did not show the red papillæ to the same extent as the others, but was heavily coated with white fur; vomited freely at first, but soon retained the hydrated peroxide of iron. No subsequent gastritis. Perfectly recoved in a few days.

4. Mrs. Gigon, aged twenty-five years. Symptoms at first not very severe, but succeeded by great prostration, attended with shivering; vomiting not very frequent, and consequently the iron was pretty well retained. On the second day great irritability of the stomach, which was allayed by laudanum and ice water. Pulse inflated; tongue thick; pain in epigastrium; no purging; warmth to the extremities; sago diluents, &c. Sixth day, broth. Seventh day, chicken, &c. Perfectly recovered.

5. Gustavus Gigon, aged twenty-one years. Symptoms generally not severe, but complained of great burning in the stomach, which was immediately relieved by the hydrated peroxide of iron. The remedy was freely administered, and re-

mained on the stomach. Said it stopped the burning, and asked for more. Pulse quick, full, and soft. Complained for several days of uneasiness in the epigastric region. No purging. Tongue heavily coated with white fur, which did not clear off before the eighth day. Appetite good, however. Soon restored to perfect health.

6. Child aged twenty-eight months. Severe vomiting; coldness of the skin and extremities; jaws firmly clenched, and with difficulty opened to administer the hydrated peroxide of iron. Insensibility. Countenance death-like. Vomiting still continued, but the antidote was repeated until it remained on the stomach. Thirst excessive. Second day: tongue furred, and marked with red papillæ more than the others. Some tenderness of the epigastrium on pressure. Tendency to coma with constant thirst. Ice water, warmth to extremities, &c. Third day: vomiting; allayed by a blister on the epigastrium, and lime-water and milk internally. Rapid convalescence and entire recovery.

7. Child aged sixteen months, not weaned. Symptoms at first nearly similar to the preceding case. The hydrated peroxide of iron was retained on the stomach, and recovery soon took place.

8. Margaret Maxwell, cook. Ate of the pudding after the rest of the family. Suddenly seized with chilliness and nausea. The hydrated peroxide of iron retained on the stomach. The tongue coated like the others. Pain in the head. Inflated pulse. Got up next morning, but became giddy, and went again to bed. No striking symptoms. In a few days was perfectly well.

Remarks.—In the two cases which proved fatal, death appears to have ensued from the direct effects of the poison on the nervous system. It might even be doubted whether the injury sustained by the stomach in either case was sufficient to have produced death by subsequent inflammatory action, and possibly both these patients might have recovered, provided the direct shock to the system could have been obviated, and reaction produced.

It is worthy of observation that every one of the patients who were able to retain the hydrated peroxide of iron on the stomach speedily recovered, and were restored to perfect health, with the entire exemption from any symptom indicating the existence of chronic inflammation of the stomach which has heretofore so uniformly followed poisoning from arsenic in the few cases which have not proved immediately fatal.

The great and almost immediate alleviation of the urgent symptoms which followed in every instance in which the hydrated peroxide of iron could be retained on the stomach, affords the strongest proof that the beneficial results ascribed to that remedy in such cases have not been overrated. Fortunately, few instances have occurred in which the virtue of that antidote could be tested on so large a scale.

Note.—The contents of the stomachs of the two patients who died were submitted to a careful chemical examination by Dr. Rogers, and the existence of arsenic in them placed beyond a doubt. A large quantity of metallic arsenic was procured both from the contents of the stomachs and the remains of the pudding.—*Med. Examiner for October.*

Division of the Muscles of the Eye for Strabismus. By J. H. Dix, M. D., Boston.

Division of Internal Rectus. October 16, 1840. Miss Mary M. C., æt. twenty-three, of Boston, has squinted from birth with both eyes, the left being more decidedly turned in, the edge of the cornea of which frequently reaches the inner canthus. She can on closing the right, turn the left out nearly as far as the other, but cannot keep it fixed there. Vision has always been weak, and she is conscious that this eye does not assist in seeing.

Drs. Reynolds, Jeffries, Hooper, Bethune, and Charles Ware, were present. The eyes being small and the patient very timid, I found it necessary to control the globe by fixing a double hook through the conjunctiva into the tunica albuginea about a line and a half from the edge of the cornea towards the inner canthus. By this means the eye being fairly everted, a fine, sharp hook was passed through the conjunctiva, and an incision made about half way between it and the double hook. A blunt hook was then brought under the muscle, and a division made with scissors in the muscle about half an inch from the cornea, which Mr. Guthrie, whose large experience renders his authority decisive, says is preferable to a division of the tendon. On opening both eyes after the trifling hæmorrhage had ceased, the left eye is observed to be straight, the squint of the right being as before. Apply compress with cold water. Keep both eyes covered.

17*th.* No pain, but complains that the eye feels heavy. Bandage removed.

22*d.* There is considerable fungous growth from the place of the incision, which is cut off with scissors.

30*th.* Miss C. has been working at her trade as a tailoress for several days past, and says that after the day's work she finds the eye somewhat turned in. In the morning it is straight. The fungous growth has re-appeared, and requires to be touched with nitras argenti.

Nov. 18. Since the last date Miss C. has been obliged to apply herself sedulously to sewing, and the eye is turned in somewhat, a little more perhaps than the right, with which, as was at first stated, she squints a little. Still the eye is by no means so much turned in as before the operation; she has the privilege, as she terms it, of turning it out when she pleases, and finds it serviceable to vision, until it is fatigued by long use. She proposed to have the muscle re-divided when she has an opportunity for resting the eye for a time. The fungous growth has at length disappeared, and the redness at the inner canthus diminished.

Division of Internal Rectus.—Oct. 16. Mrs. I., æt. twenty-six, of Boston, squinted with right eye at nine months of age, immediately after hooping-cough. The squint is very decided, a portion of the cornea being hidden at the inner canthus. Drs. Doane, Dale, and Parkman, being present, the operation was performed as in the preceding case, except that the patient possessing considerable fortitude, I dispensed with the use of the speculum and the double hook, with which in the first case the eye was turned out. She kept the eye steadily everted a little towards the outer canthus. On removing the instruments the eye was found to be perperfectly straight, and capable of turning inward very little. Compress wet with cold water to be constantly kept on the eye, both being covered at the same time. Light diet.

18*th.* Mrs. I. suffering no pain, and having had none except for about eighteen hours after the operation, and then not severe, I directed the eyes to be uncovered.

20*th.* Has had some pain, about as much as immediately after the operation, which may perhaps be attributed to her getting chilled by exposure to the night air while looking from the window at a fire. Renew application of cold water. Sulph. magnesia ℥i.

21*st.* Eye comfortable. At several times since the operation she has had double vision for an hour at a time, but she has not observed it for three days past. Vision is much

clearer and stronger than before the operation, and the only difference perceptible in the eyes, which are both perfectly straight, is that the right cannot be turned to the inner canthus quite so far as the left.

Nov. 22. Eyes perfectly straight, and motions of both parallel, the right having a farther movement inward than immediately after the operation.—*Med. Examiner for Nov.*

Precocity in a Boy.—The case of precocious puberty in a female child mentioned in your Journal of Dec. 2, reminded me of quite a curious instance in a boy now living with his parents in this city.

William S. W*** was five years old on the 9th of last August. At his birth he weighed eight pounds. During the first twelve months he did not grow with very remarkable rapidity; at eighteen months he had become uncommonly large, and has ever since continued to grow rapidly. He began to walk when one year old, and to talk distinctly about a year later. Until within a few months he has been sprightly and energetic in all his movements. During the summer past he has lost several pounds of flesh, and has seemed feeble and reluctant to engage in his ordinary amusements. He has never been very fat; on the contrary, rather lean. His appetite, until he was two and a half years old, was delicate, and milk was his principal nourishment; after that period he began to relish other kinds of food and to eat largely, as much so at times as an ordinary laboring man. The parents suspect, that not having been with them during the past summer, the boy has suffered for want of a proper allowance of nutritious food, and to the latter circumstance, chiefly, they attribute his loss of flesh and activity. At the age of four years the child weighed sixty pounds avoirdupois; and when he was five years old his weight was seventy pounds, althongh, as his father stated, "he was quite thin at the time." His height is four feet six inches. His body is rather long in proportion to his limbs; when his health is good, his muscular strengh is proportionate to his size.

The organs of generation began to exhibit an unusual development as early as the eighteenth month and are now nearly of the adult size. There is a trifling growth of hair on the pubes. There is no evidence of excessive sexual desire, although on this point the parents are unable to speak

decidedly. His voice for more than a year has been on the bass key.

He has habits of quick and accurate observation; his memory is retentive, and his mind of an inquisitive cast. He reads fluently in easy lessons, but no efforts of any description have been made to draw out his mental powers. His head is large: and, regarded phrenologically or otherwise, is well shaped. He is readily moved to tears—and injury produces grief rather than ager. His resentments, when they do arise, are rather sudden than lasting. Occasionally he indulges in bursts of mirth, but commonly his deportment is grave, with a prevailing air of melancholy.

In all the peculiarities of the boy there is a close resemblance to the early history of the father, who is now about thirty-five years of age, and who acquired his present stature at the age of *nine years*. The family from which the father's mother sprung has presented several instances of similar precocity, all of which occurred in the *male* descendants. In these instances there was uniformily the same peculiar conformation and want of symmetrical figure, produced by a long trunk surmounted upon short limbs.

There is one other circumstance connected with the ancestry of this lad, which although not absolutely pertinent and necessary to be related here, is exceedingly interesting to me, and I dare say will be so to a majority of your readers. I am induced to mention it, because it may serve as a key to modulate our expectations in regard to the future destiny of the child. The father is one of the ripest and most accomplished scholars in New England, and has for several years been distinguished and publicly praised for his poetical talents; and before he reached his twenty-third year he wrote a learned essay, which, although opposed by several rivals, won a premium offered for the best production on the given subject. The father's mother was likewise remarkable for intellectual endowments, and one rare attribute of her mind was that whatever she read was retained in her memory like a nail driven in a sure place.—*Boston Med. and Sur. Jour. for Dec.* 1840.

On the Employment of Lactate of Iron. By MM. Gelis and Conte.—After stating some objections to the preparations of iron in common use, the authors give their reasons for supposing that the lactate of the protoxide of iron is su-

perior to all other ferruginous preparations. These are that lactic acid is universally distributed throughout the body; and that all authors have endeavored to administer iron in the form most easily soluble in the gastric juice. Berzelius, Tiedemann and Gmelin, Dumas, Leuret and Lassaigne, have shown that the gastric juice has sufficient lactic acid to account for its dissolving property. They find that the most useful preparations of iron are those most soluble in lactic acid and the reverse, and therefore consider it probable that iron after administration is converted into lactate of iron. Thus they were led to give the lactate direct.

M. Bouillaud and other members of the Academy administered this preparation in twenty-one cases of anemia and chlorosis; but though they speak favorably of it, it did not appear to them to possess any decided advantage over other soluble preparations of iron.—*Bul. de l'Acad. Ib.*

Complete absence of Menstruation. By M. Kruger-Hansen.—A woman of about fifty-eight years of age, of a robust constitution, and who had always enjoyed good health, much younger in appearance than she really was, and in whom all the feminine characters were well developed, never in the whole course of her life had any discharge at all similar to the menses. She never had *flour albus*, or any abnormal sanguineous discharges or sweats, to compensate for the want of the usual monthly secretion. It is added that the sexual appetite was present, but that she never had borne children. M. Kruger-Hansen, from this single imperfect case, draws the conclusion that the menstrual discharge is not absolutely necessary to woman. It is obvious, however, that, before such a conclusion could be drawn, it would be necessary to ascertain whether all the organs were present, and well developed. The omission of this renders the case incomplete. *Graefe's and Walter's Journal. Ib.*

Colocynth Oil, a Substitute for Croton Oil in Neuralgia, Sciatica, &c. By M. G. Janelli.—Dr. Janelli mentions that he has found the oil of colocynth a valuable and cheap succedaneum for croton oil, as an external application in neuralgic affections, but especially in sciatica. He relates in detail three cases of its efficacy in sciatica, and three in cases of

rheumatism. After frictions with the oil, the patient generally fell asleep, so much were their sufferings alleviated, and in a few days were so far recovered as to be enabled to return to their usual avocations.—*Observatore Medico. Ib.*

Congestion of the Kidneys.—Dr. Watson reported the case of a sailor who entered the hospital for retention of urine without stricture. On passing the catheter, no urine was found in the bladder; high febrile excitement ensued, the bowels became tympantic, and the patient died two days after admission. On autopsy, both kidneys were found enlarged, and studded in their external surface with numerous spots of coagula. Dr. W. had never met with a similar case.—*N. Y. Jour. of Med. and Surg. Ib.*

Danish Medical Statistics.—In the Danish Medical Library for January, February and March, of the present year, there are copious extracts from the Transactions of the Royal Society of Health for 1839. The first is an account of the prevailing diseases in Denmark, with the exception of Laaland and Falster, during the year 1838. These are smallpox, scarlet fever, measles, catarrhal complaints, typhus, which has been very prevalent, rheumatic fever, puerperal fever, psora, syphilis, croup and hooping cough, which last, after an absence of six years, has re-appeared among persons of all ages in the Faroe Isles. We are also informed that in the same year (1838) 18,813 persons were vaccinated in the whole kingdom for the first time, and 1052 were re-vaccinated. That in Iceland 481 were vaccinated for the first time, and 647 were re-vaccinated.

The tables of births and deaths are not very precise. The number of accidental deaths and suicides, strangely enough united together, was 514.—*Bibliothek fur Læger. Boston Med. and Sur. Jour. for Dec.* 1840.

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HOSPITALS OF PARIS—BY M. L. LINTON, M. D.

Dear Sir,—My last letter to you consisted of a condensed account of the views of Professor Trousseau on the medicinal properties of iron. At that time I intended writing a series of letters composed of matter derived from the same source, and certainly it would be difficult to select any thing of more practical utility. But as I have since that time procured the recent work of the Professor, on Therapeutics and Materia Medica, which substantially contains his lectures, I shall abandon the subject for the present with the intention of presenting, at some future day, a review of the entire work, or a translation of such portions of it, as I may conceive most worthy of attention. Having made this explanation and promise, I shall seek elsewhere for the material of the present communication. Would a brief notice of all the Hospitals of Paris be interesting? It could certainly be made so; but whether or not I shall so render it in the confined limits of a letter, is questionable. I proceed, however, to the task; and first to a sketch of the far-famed 'Hotel Dieu.' This is not only the most ancient hospital of Paris, but perhaps of Europe. It was founded in the year 669 by St.

Laundry, Bishop of Paris. It was intended for every variety of disease, all ages, sexes, conditions, countries and religions; its device being '*Medicus et hospes.*' The number of sick in this establishment has always been very great. It rose in 1709 to 9,000. It is said, or rather written, that during the middle ages it was not uncommon to see fifteen patients in one bed,—the dying, the dead, and the convalescent! The wards badly lighted, were worse ventilated. Diseases, contagious and non-contagious, medical and surgical, women dying with puerperal fever, and those under the pains of parturition, the sane and the insane, were promiscuously crowded together, and the surgical operations a spectacle for the whole.

Under these circumstances it is not at all wonderful, that Hotel Dieu was so insalubrious; and that its mortality was nearly twenty-five per cent. This wretched state of things continued, with some trivial modifications, until the revolution of 1789. Since that epoch it has undergone successive and important improvements; other hospitals have been established and a proper distribution made of the sick. The insane were sent to Salpetriére and Bicetre—those affected with venereal diseases were assigned to the Venereal Hospital, and those with diseases of the skin to the Hospital of St. Louis. Special hospitals for infants and lying-in-women were also established, and those of La Charité and La Pitie enlarged. By these vast additions to the means of meeting the demands of the times, the population of Hotel Dieu was reduced to about 750—the ordinary number at present. Comfortable beds on iron bedsteads furnished with curtains, now fill its airy, neat, and extensive wards; and a convenient distribution is made of its inmates. The mortality of Hotel Dieu at this time is about one in nine, and the mean expense incurred for each patient, a little less than thirty-four cents per diem,—far less than when its accommodations were far worse. Those who from time to time have given an account of Hotel Diou attribute its mortality in part to its proximity to the central office of the hospitals, to which all applicants for admission are obliged to go for examination and authority to enter. Hotel Dieu being nearest, the worst cases, say they, are sent to it. Its principal physicians are Majendie, Récamier, and Chomel. Of Majendie it is not necessary to say much. He is known to all the world as an able physiologist, and (cruel?) vivisector. I have frequently attended his lectures and physiologico-pathological demonstrations. He is a short, strongly built little man, aged about fifty years, and a tolerably good, though not a flu-

ent lecturer. His method is simply to pronounce his profession of faith, and then bring forward, or rather drag forward, as proofs, a parcel of poor dogs, that howlingly and unwillingly confirm it with their blood. Does there exist an imperious necessity for such martyrs?

Récamier has great reputation as a physician. Chomel is one of the first pathologists of the age. The surgeons of Hotel Dieu are Roux, Breschet, and Blandin. Roux is the chief, being the successor of Dupuytren. He is a robust, white haired old gentleman of about sixty, and perhaps the most adroit operator in the capital, though by no means a good lecturer. He speaks too rapidly to be understood by foreigners, and hence is not so much followed by them as Velpeau, whose enunciation is slow and distinct. Breschet and Blandin are known as anatomists.

The Hôpital de la Charité contains about 500 beds, and may be considered as second in importance to Hotel Dieu. For the year 1837 its mortality, in the medical department, was one in nine; in the surgical, one in twenty-two—the mean cost for each patient, per diem, thirty cents—the number of sick admitted, 8,157, and the mean duration of their stay, seventeen days. Its physicians are Andral, Rayer, Bouillaud, Fouquier, and Bailly. Andral is a serious, thoughtful looking man, aged about fifty years, and unsurpassed as a lecturer. Rayer is rather youthful in appearance and very large, resembling somewhat his recent large work on diseases of the skin. Bouillaud's person is tall and slight; his forehead is high and expansive. He is an ardent disciple of Broussais, and distinguished for a voluminous and well written work on the diseases of the heart. Fouquier is as large, almost, as Rayer. He is an old man and a popular physician. Bailly is known as the introducer of several articles into the materia medica. Velpeau is the principal surgeon. His age is between forty and fifty, his hair is somewhat grey, complexion rather sallow, height and size medium. I have already alluded to him as an agreeable lecturer. He has a rich vein of humor, that breaks out from time to time to the infinite amusement of his audience.

Velpeau is one of the very first men of Paris, or of the world. His general scientific and professional attainments are of the highest order, and as a surgeon he is second to no man. As an author, his reputation is enviable. The recent edition of his great work on operative surgery, which professor Dunbar of Baltimore is now

translating, being doubtloss the best extant, on that subject. I have seen him perform almost all the capital operations—some of them frequently. He has recently exsected the lower jaw twice, and the upper jaw once—removed the uterus in two cases, and exsected several deep seated tumous of the sub-maxillary region. In diagnosis it would be difficult to find his superior. Some time ago, a man aged about twenty-five years, presented himself at the hospital with a large tumour of the scrotum; or rather a tumour *attached to the scrotum.* After due examination Velpeau humorously pronounced the fellow *pregnant with his little brother!*—in other words, that it was a case of superfœtation; and then proceeding to the operation, verified his diagnosis by exsecting the principal parts of a fœtus, to the great astonishment of the class. He remarked that the annals of surgery did not furnish such another case, in many of its features.

It is but proper to observe that a great proportion of his capital operations have been unsuccessful. This, however, is not the fault of the operator. Twenty years ago, Velpeau came to Paris without a profession, without money, and without friends—a poor boy from one of the provinces. A laudable ambition and untiring industry has made him what he is—a towering monument to the often repeated, but seldom appreciated adage, "labor vincit omnia."

The Hospital de la Pitie is larger than La Charité. The number of its beds is near 600. It is finely situated in the face of the Garden of Plants, and includes several spacious courts, set in grass, and adorned by various species of shrubbery. In the year 1837, the last on which official documents have been published in relation to it, this establishment received into its medical wards 3,697 men, and 2,772 women. The number of surgical patients was 1,509. The mortality in the medical department was a little less than one in eleven—in the surgical about one to twenty-six and a half. The mean cost of each patient, per diem, is twenty-eight cents—the mean stay of the sick, or, in other words, duration of the diseases was twenty days. The reason why the mortality of this hospital is less than that of the other similar establishments of the city, is probably to be found in its proximity to the Garden of Plants—a vast area planted in almost every species of the vegetable kingdom. St. George's of London is so situated as to be fanned by the air of St. James and Hyde Park, (the lungs of London) and is said, therefore, to be more salubrious than the other hospitals of that city.

The most noted physicians of La Pitie are Piorry and Gendrin—they were rivals in the concours of last winter. Piorry was chosen, though I think it must be admitted that Gendrin is his superior. Lisfranc and Sanson are the surgeons. Lisfranc is a very large, noisy man, and takes great delight in abusing Velpeau, who perhaps is more amused at, than hurt by it. All the world knows that Lisfranc is a good surgeon, but not that he is more adroit and successful than any and every one besides. He attends to diseases of the uterus as a sort of speciality, and is far more successful in them (according to himself) than any other surgeon or physician. He uses the speculum uteri in every instance, by which he is enabled the better to diagnosticate the condition of the parts, especially of the os uteri. I have not room to say any thing of his treatment, nor do I know that there is any thing novel in it.

The Hospital St. Antoine was opened in the year 1796. It contains 300 beds. The number of admissions from 1804 to 1814 was 21,160, and the mean mortality one in five. In 1837 it was one in seven in the medical service, and one in seventeen in the surgical. The mean cost of patients, per diem, was one franc seventy-four centimes—about thirty-four cents—the number of admissions 3,495. The mean duration of their stay twenty-five days. Physicians, Kapeler and Guerard. Surgeon, Berard the elder.

The Neckar Hospital contains 400 beds. Its mortality from 1804 to 1814 was one in six. In 1837 it was one in six also, in the medical department, and one in seventeen in the surgical. The mean expense of each patient, per diem, two francs and thirty centimes. The number of admissions during that year 2,332, and the duration of their stay seventeen days. Physicians, Bricheteau and Trousseau. Surgeons, Civiale and Berard, the younger.

A few words in relation to Civiale and his operations for stone. He is a robust, fine looking gentleman, of perhaps fifty years of age. I have seen him operate very frequently. He used in every case the simple curved instrument of Heurteloupe. Indeed I do not recollect that he ever introduced his own three branched instrument, more than once or twice. It would not be far from the truth to assert, that this very simple instrument is the best, and the only one necessary, in all the cases in which lithotrity is preferable to lithotomy. That there are a great many such cases no one now doubts, whose opinion upon the subject is entitled to consideration; and that

there are many cases which require the knife, even Civiale admits; and sometimes resorts to it.

The Hôpital Cochin bears the name of its venerable founder. It contains only 100 beds. The number of its admissions during the year 1837 was 863. The mortality in the medical wards was one in seven, and in the surgical one in twenty-eight. Cost, per diem, for each patient two francs—thirty-eight cents. Physicians, Blache and Briquet. Surgeon, Michon. M. Briquet is a warm advocate for mercurial ointment as a local application in smallpox; according to his experiment it prevents pustulation and its deprecated and indelible consequences.

The Hôpital Beaujon, situated in the northern suburbs of the city, contains 300 beds, and as considerable additions are being made to the buildings, this number will be greatly augmented. For the year 1837 its mortality was one in five. The mean expense for each patient one franc and forty-two centimes, and the mean duration of their stay twenty-three days. The great Louis is the principal physician. Marjolin and Robert are the surgeons.

Louis is doubtless one of the first pathologists of the age, perhaps the very first, as regards diseases in the chest. No one in a given case can tell better than he the alterations in the organization in which the disease consists. Unfortunately, however, therapeutics do not advance side by side with pathology; or the power to cure with the knowledge of what is to be cured. No one doubts the importance of pathological anatomy, or of the physical signs in diseases of the chest; and yet he who is unacquainted with either treats these affections as successfully as Louis. The learned pathologist sees the irreparable state of the organs, and will not make therapeutic efforts, which he knows to be unavailing. Sometimes, however, he errs in his diagnosis and abandons even those who by a well regulated course of treatment might be cured—whilst the mere rationalist, not knowing nor fearing these states of the organization, makes war with equal confidence against the conquerable and the unconquerable, always, of course, failing in the latter, but occasionally succeeding in those almost desperate cases of the former, which an error in diagnosis had led the finished pathologist to abandon as hopeless. The following case is somewhat illustrative of what is here advanced: An American lady whose lungs were diseased came to Paris to consult Louis; but first called on her countryman, Dr. Mott, who has for some time resided in the city. Louis was

called in—examined the chest, and advised only a few palliatives, as hop tea, &c. &c., being convinced that she was incurable. The lady rejected the prescription, and requested Dr. Mott to attend her. Guided by his notion of the pathology of the disease, he commenced with calomel and opium, blistors and other heroics, and succeeded in the restoration of his patient to perfect health. I have this statement from Dr. M. himself. Louis is a rather tall, handsome, staid-looking personage, in spectacles, aged about fifty years.

The following are special Hospitals, or those devoted to particular classes of disease.

Hôpital Saint Louis. This is a very large establishment containing 800 beds, and devoted principally to the diseases of the skin; some chronic diseases, as rheumatism and scrofula, and cases of syphilis, are also received. These latter, however, according to Carmichael should be classed with the exanthemata. There are given here each year about 50,000 baths, 40,000 fumigations, and 2,000 douches. The mean mortality from 1804 to 1814 was one in twenty-six, and the mean duration of the patient's stay thirty-two days. The number of admissions per annum has not varied for the last twenty-five years—being in 1812, 7,991, and in 1837, 7,940. The principal physicians are Gibert, Lugol, and Biett—the latter, however, has recently died. Richorand was recently attached to this hospital—he died during the last winter.

The Hôpital des Cliniques has been recently established. Its proximity to the school of medicine, renders it very convenient for clinical instruction, the principal object for which it was instituted; part of the wards are devoted to obstetrical practice. Rostan, who was at the head of the medical department, is removed to Hotel Dieu. I do not know who is in his place. J. Cloquet is the surgeon—Paul Dubois is the accoucheur, aided by some ladies almost as learned and skilful as himself. He performed the Cæsarian section last winter, and saved both mother and child.

Hôpital des Veneriens. Shortly after syphilis made its first appearance in Paris, it inspired such dread that a law was passed, that all strangers affected with it should quit the city, and be punished with death should they re-enter it uncured. Those who were confined to the hospitals were liable to the same punishment, if they ventured out without the authority of the pyhsician. It was not surprising, that the feelings which gave existence to such a law, should also give rise to such an establishment appropriated to this class of

maladies. This hospital contains 400 beds, all for males. The women have an establishment of their own, the Lourcine, and a prison, besides, for those of the frail sisterhood, who from time to time fall into the hands of the police. The mean mortality in this hospital for 1837 was one in two hundred and three; the mean stay of the patient thirty-two days; the number admitted 2,376. M. Ricord is the chief of this establishment, and no one (if every body is to be believed) is more worthy of the honor. A medal was awarded him by the Academy of Sciences, for his great work on venereal diseases. He has proven by numerous experiments the non-identity of gonorrhœa and syphilis; that matter taken from a syphilitic sore, produces a similar ulcer when inserted into the skin of any other part; while gonorrhœa matter will not. He regards the primary ulcer, or chancre, the 'fons et origo' of the secondary or constitutional form of the disease, and conseqnently cauterizes, or excises it as soon as possiblle. If this is not done without delay, says he, the constitutional contamination supervenes, and calls in most cases for the use of mercury. On this speciality, Ricord is perhaps the highest authority in the world. He is sometimes called to London in consultation on this and analogous diseases. He is an American by birth, and retains his partiality for his native land.—But I must pass on to the remainihg hospitals, of which a very brief notice must suffice, as I have already extended this article to a greater lenghth than I intended.

The Hôpital de Lourcine has already been alluded to as a female venereal establishment. The number of admissions in 1837 was 1,872; the mean mortality one in fifty, and the mean duration of their stay fifty days.

The Maison Royale de Santé is devoted to those who are able to defray a part of their expenses. The number of admissions for 1837 was 1,287; mean mortality one in six; mean duration of the disease twenty-three days. In this hospital the patient is of course more comfortably situated than in those in which he contributes nothing to his maintenance and medical attention.

Hôpital des Enfants Maladies. This a large and airy establishment, situated in the southwestern surburbs of the city. The two sexes are here received, aged from one year to fifteen. It contains 560 beds. The mean mortality of this hospital has always been very great—nearly one in four. The number of its inmates is at present more than 3,000.

It is here that M. Guérin, the great orthopodist, performs so many operations for club-foot. His method is to cut all the tendons concerned in the production of the deformity.

The following establishments are termed Hospices. They are designed as asylums for infancy, age, and those affected with incurable diseases:

The Hospice d' accouchement is devoted to pregnant women who have attained their eighth month. The number of beds is 433. It is well ventilated, and has several fine promenades; its wards are neat and well regulated. In short, the French seem to think that women waiting for the pains of parturition at the Hospice d' accouchement are in no unenviable condition.

Hospice des enfans trouvés, or Foundling Hospital. Until within a few years the mortality of this asylum was almost incredible, being some years four out of five, and even now, after all that vigilance and improved regulations can do, has been done, it amounts to almost one-third. The number at present is not far from 5,000.

Hospice de Salpetriére. This is one of the most splendid and extensive asylums in the world. It is designed for indigent women who have attained the age of seventy years, and the poor of the same sex who are afflicted with mental derangement, idiocy, epilepsy. &c., &c., of all ages. The number of beds for the old and indigent is 5,000, conveniently distributed in vast ranges of buildings appropriated to this class of inmates. The number of the deranged, idiotic, epileptic, &c. varies from one thousand to twelve hundred. They are so disposed of, as not to incommode each other, or disturb the tranquillity of their neighbors—the old women. The proportion of cures is about one-third. Harsh means, either of a moral or medical character, are never resorted to. The remedies principally used, besides kind treatment, are baths, douches, mild purgatives. exutories &c., with or without isolation; all these means are of course varied according to circumstances.

The Hospice de Bicètre, situated in the country a little more than a mile from the city wall, differs in destination from Salpetriére only as to sex. Here males only are admitted, of whom also two grand divisions are made—the aged and the alienated. Of the former there are about 3,000, of the latter 8,000. Bicètre is situated on elevated ground surrounded by cultivated fields, and commands a fine view of the southern portion of the city.

I must bring this notice to a close with a mere mention of the

seven remaining Hospices. They are consecrated to the incurable, the indigent and the aged, and are designated as follows: Hospice of incurable men, Hospice of incurable women, Hospice des ménages, H. de La Rouchefoucauld, the Institution of St. Perine, H. St. Michel, and the H. de Villas, making in all seven general hospitals, five special hospitals and ten hospices.

The only apology that I shall offer for the imperfections of this notice is its brevity—an objection which, I fear, will not be urged against it.

December 24, 1840.

RACHITIS.

No apology, we are sure, need be offered to our readers for the great length of Dr. Colescott's translation of the celebrated memoir of M. Guérin, which occupies so large a portion of the present number of the Journal. It is one of a series of articles on the deformities of the osseous system, comprised in a beautiful octavo volume of upwards of four hundred closely printed pages, with here and there an illustrative lithographic engraving, which was published at Paris in 1839. One of these papers—that on the general etiology of congenital club-foot—appeared, not long ago, in Professor Dunglison's "Medical Library;" and, if we mistake not, that which is now presented to the American profession will be equally acceptable to them. Indeed, it may justly be regarded as the most valuable of them all. Much, it is true, had been previously written upon the subject, but we perfectly agree with the learned author when he declares that no one had thoroughly understood it. This, in fact, appears at once obvious from the great variety of diseases which have been described, from time to time, under the name of rachitis, which seems to have hitherto been employed rather in a generic than a specific sense, precisely as the term "phthisis" was lately used to designate a whole group of dissimilar affections, and not, as is now done, a single malady, marked by peculiar symptoms and distinct anatomical characters. It was reserved for M. Guérin, the distinguished director of the orthopedic Institute of Paris, to place the disease in its true light, by studying it as it occurs in the different periods of life, in both sexes, in different orders of society, upon the living sub-

ject, in the dead body, and in the different stages of its progress; thus dissipating, by a series of the most admirably conducted observations and dissections, the confusion which had heretofore existed in relation to the subject, at the same time that he has presented us with a large amount of the most valuable information, which may always be referred to with interest and instruction.

In our next number we shall endeavor to present more variety, which is, perhaps, not less the spice of medical literature and science than of life. Within the last few months, several interesting articles have been received, intended for the present number, which have been necessarily laid over for want of room. They will appear as early as practicable. The review of Professor Gross' Elements, which has been for sometime suspended, will also be resumed in the next, or an early number. D.

THE AMERICAN ALMANAC, FOR 1841.

For this excellent little annual the profession is indebted to the enterprise of Dr. J. V. C. Smith, the spirited editor of the Boston Medical and Surgical Journal. It was prepared especially for the use of practising physicians, surgeons, students, and apothecaries, and embraces a greater amount of interesting and really useful information on subjects pertaining to the profession, than is anywhere to be found in the same compass. No physician or student should be without it. As a pocket manual it will prove a great convenience to the practitioner; and for reference, it is invaluable. The body of statistics which it presents, on almost every conceivable subject of interest to the medical man, is immense. We hope Dr. Smith will be encouraged to continue his almanac annually. We doubt whether there is a man in the country who would get up such a work with so much industry, judgment and taste.

We give a few extracts from the "Statistics of Insanity and Institutions for the Insane, in the United States," which is a subject of universal interest:

The recoveries from insanity in the New England institutions are about fifty per cent. of the whole number of patients admitted, and an average of from 80 to 90 per cent. of the recent cases of less

than one year's duration. The term "recent case" is applied differently in different institutions. In the State Lunatic Hospital a case of less duration than one year is denominated a recent case. In some institutions the period is limited to six months, and in others to three months. This will make an obvious difference in the record of recoveries, as it is well known, that cases of three and six month's duration, recover in greater numbers than those that have existed nine and twelve months.

The present condition of the institutions in New England, New York, Pennsylvania and Ohio, is very good, perhaps better than most others in the world; and if in the other States they have heretofore been behind them, a spirit of improvement is awakened which will secure for these institutions the same advantages now possessed by their neighbors.

To Dr. Rush, our distinguished countryman, the new world is indebted for the application of the law of kindness in the management of the insane. Like the immortal Pinel, his efforts diffused light and knowledge among his countrymen, and the condition of the insane has been one of progressive improvements from his time to the present. He opened the prison door, unbarred the dungeon, and knocked off the shackles of the maniac with the same fearlessness and with the same benevolent spirit as incited the French philanthropist when he entered the dungeons of the Bicêtre and liberated the tenants of half a century. The writings of Dr. Rush are full of instruction on the moral treatment of insanity, and his essay "On the Influence of Physical Causes upon the Moral Faculty," exhibits a knowledge of certain forms of mental disease, quite in advance of his cotemporaries in Europe."

The treatment of insanity in the institutions of New England, is based on the philosophy of Dr. Todd, and may be summed up in a few words—*The adaptation of the law of kindness to all cases—the inculcation of self-control by various means, always kept prominently in view of the patient, and the application of judicious medical remedies and regimen, to restore and preserve a healthy state of the physical system.*

It is only in the institutions assigned for the special treatment of insanity that this system can be carried out, so as to afford a reasonable hope of success. Home and friends so desirable to us in most cases of disease, are generally not well appreciated by the insane. Any attempt to control and manage them by friends, is generally met by resistance, and usually by enmity and opposition. The best advice of the physician is discarded, and no system can be pursued with sufficient regularity and perseverance to afford any great prospect of benefit.

In the moral treatment of the insane, the first object is to secure the confidence of the patient. This must be done by extending to them every indulgence and kindness compatible with their own safety and that of those around them, and who have them in charge. If furious and violent, every motive should be presented to induce them to be reasonable and quiet.

In their moments of composure they will be influenced by motives, and in thoir greatest violence, kindness and gentleness will often restore tranquillity, when severity will induce excessive fury, and permanent prejudice against those who control them.

If we desire the insane to act as rational beings, we must be consistent and treat them as such, encourage their self-respect, present to them motives of self control, and grant to them such liberties as they can appreciate and will not abuse. For this purpose labor and amusement are invaluable auxiliaries in the treatment of the insane. They require a safety valve to expend the excessive excitement of the system, and if it be not expended in labor or diversion, it will be exhibited in noise, violence, and mischief. Next to judicious medical treatment, employment is the best remedial means to remove insanity—it is a complete substitute for restraints, which are irksome, and which should never be applied when other means of control are available and effectual. Pursuing this course with perseverance, in a great proportion of the cases, the violent and furious will become calm, without any corporeal restraint whatever. But there are cases in which such restraints are necessary both to the welfare of the patient and those with whom he associates. When they are resorted to, they should be as easy and comfortable as possible, and should be removed as soon as the patient is in a candition to control himself. The solitary room, the mittens, and the wristbands, are all the corporeal restraints admitted in the State Lunatic Hospital, and while this paper is being written, with 240 patients, not exceeding five are under any such restraints whatever.

While restraints should be applied as rarely as possible, and never but for the personal benefit of the patient, and the safety of those with whom he must associate, yet they are important auxiliaries in the treatment of the insane, and I can but deprecate the plan of dispensing with them entirely, as the current of popular opinion at present seems to tend.

It is undoubtedly true, that with corporeal restraints judiciously applied, the patient will sooner be made tranquil than by the presence of one or more attendants, who he well knows watch all his movements, and will interfere with all his mischievous designs. Their presence will become a source of irritation itself, which will serve to keep up his excitement.

Restraints are no less necessary for the suicidal melancholic than for the furious maniac, and for both are far less disagreeable to the patient than the unceasing *surveillance* which is necessary as a substitute. Labor is the best substitute for restraint, as it expends to good purpose the excitement which is the cause of the noise and mischief with the violent insane. Suitable labor presents a constant motive to regularity, concentrates the mind to one object, exhausts in muscular action the accumulated excitability, promotes healty appetite and quiet sleep.

Labor is a rational employment, and the insane feel no little complacency in being able to perform it acceptably.

Disease, with the maniac, is a substitute for sleep. It keeps the brain perpetually active in the *production* of the principle of life as well as in its *expenditure.*

The object of medicinal remedies in the treatment of insanity is two fold. To remove the symptoms of bodily disease that may be present, and not unlikely the cause of the disease which affects the mind, and to act directly upon the brain and nervous system, influencing their condition, and removing all irritation which keeps up maniacal excitement.

Experience shows that many of the causes of insanity are to be found in the diseased condition of organs, connected only by sympathy with the brain. These cannot be reached by moral influence or restraints, but must be removed by the application of suitable medicinal remedies adapted to their cure. There is also a condition of the brain itself on which insanity often depends, which may be reached by these remedies with as much certainty as other diseases are relieved by medicines. The maniacal excitement subsides as the brain becomes restored to a healthy condition.

Those physicians who only prescribe moral treatment for the insane, overlook the important fact that insanity is a physical disease, always depending on a morbid condition of the brain and nerves, primarily induced, or the result of direct contact with diseased functions, in sympathy with them, with the existence of which a restoration to health and soundness is wholly incompatible. In this consists the superior advantage of the system of treatment pursued in all the New England institutions for the insane, that while they adopt the very best moral treatment, they also rely with great confidence on a careful, judicious, but efficient use of remedial agents. Combined, they render insanity a less formidable disease than many others less terrific, and enable us to restore from 80 to 90 per cent. of cases, a success that can hardly be claimed for any other formidable disease.

Rhode Island, Delaware, North Carolina, Illinois, Indiana, Mississippi, Missouri, Louisiana, Alabama, Michigan, and the Territories, with a population of 2,300,000, have no institutions for the Insane, and have made no efforts to raise the funds necessary to establish one. The number of insane in these States and Territories, is probably about 2,300.

Massachusetts, about 700 insane—accommodations for 480; Maine, 400 insane—accommodations for 120; Vermont, 250 insane—accommodations for 70; Connecticut, 300 insane—accommodations for 100; New York, 1,800 insane—accommodations completed for 430, preparing for 800—1,230; Pennsylvania, 1,400 insane—accommodations for 300; Maryland, 360 insane—accommodations for 80; Virginia, 1,000 insane—accommodations for 300; Ohio, 1,000 insane—accommodations for 120; Kentucky, 550 insane—accommodations for 130.

Dr. Woodward, the distinguished superintendent of the Worcester Lunatic Hospital, by whom the above statistical table was con-

structed, supposes that there is in New England, 1 insane person suitable for confinement in a hospital to 1,000 of the population. At the south the proportion is somewhat less.

The Statistics of Phrenology are given with the rest, and justice is done, in the following extract, to the great AMERICAN PHRENOLOGIST:

Dr. Charles Caldwell.—This gentleman has ever been a most able and efficient advocate of Phrenology. His writings in its behalf have been very numerous; if they were all collected and published together, they would constitute three or four large octavo volumes. His labors and merits will be more appreciated, as well as held in greater respect, by posterity than by the present generation.

Y.

STOKES AND BELL'S PRACTICE.

We have received a copy of this work from the publishers, and shall take the earliest occasion to give our readers our opinion of its merits. We have had leisure merely to look into one or two of the lectures of Dr. Bell, but from that slight inspection we are prepared to find his additions to the labors of Dr. Stokes highly valuable. No writer on practical medicine of the present day has higher claims to the confidence of the profession, than the distinguished teachor at Dublin; and Dr. Bell has long stood in the first rank of American medical writers. Besides his lectures, twelve in number, Dr. Bell has added copious notes to the lectures of Dr. Stokes. The lectures are devoted to typhus fever; congestive fever, its pathology and treatment, at great but not unnecessary length; rheumatism; and laryngitis. The use of sulphate of quinine in large doses—a practice introduced by physicians of the south-west, is strongly commended by Dr. Bell. His analysis of the operation of calomel is clear and able.

The volume contains 672 8vo. pages, and is handsomely printed on good paper.

Y.

MEDICAL INSTITUTE OF LOUISVILLE.

The annual catalogue of this institution has just been published, from which it appears that the number of its pupils is 205; of whom 70 are from Kentucky, 50 from Tennessee, 21 from Alabama, 19 from Indiana, and 17 from Mississippi; while the remainder are derived from nine other States and Territories, with one from Texas. The Institute opened, in 1837, with a class of 80 students; its second class numbered 120, and its third, 204. Of the twenty six medical schools in the United States, its class, last winter, was the third in number. We have not yet received catalogues from any of the schools, this season Y.

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THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

FEBRUARY, 1841.

ART. I.—*Desultory Notes of a Medical Traveller.* In a letter to one of the Editors, dated Staunton, Virginia, July 7th, 1840.

ON Saturday, the 4th inst., I found myself among a large assembly of people that had collected from various points to witness the commencement of the University at Charlottesville, an institution of which Virginians may justly feel proud. Among the graduates were eight who received the honors of our profession, at least so far as the degree of this institution could confer them; for on conversing with some of them, I

soon discovered they did not consider their education completed, as, notwithstanding the rigorous examinations through which they had passed, all expected to attend some other school for a degree—the University of Pennsylvania appeared to be the favorite with most of them, though State pride will induce others to go to the new school at Richmond;—Louisville presents the greatest attractions for all who expect to settle in the great Valley of the Mississippi.

You should have received a more extended account of this institution, and of the pleasant town near which it is situated, but my visit was very short, and unfortunately on a gala day, when all were intent upon the approaching festival and the ceremonies of commencement. Every thing appeared in holiday garb, which you know is not very favorable for critical scrutiny; my impressions were very agreeable, and incline me to accord to the institution a very high rank,—one which, perhaps, even exceeds the most sanguine anticipations of its patriotic founder. Of the Professors in the medical department I can say nothing, not having had the good fortune to meet any of them. They appear to stand high, but their practice must be limited, as this is a remarkably healthy region, not densely inhabited, the town small and containing other physicians. These circumstances, in connexion with the small size of the class, and the want of a hospital, must render it any thing but a desirable residence for one ambitious for distinction in the profession.

Of the buildings, I may say that they are commensurate with the expanded views of their projector, who, from the heights of Monticello, looked upon the beautiful undulating plain at the base of the Blue Ridge, observed its capabilities, and, prompted, no doubt, by the most benevolent motives, determined to erect an institution worthy of his glorious

state. The arrangement is rather diffuse, but the effect is good when observed from certain points. The plan is a very expensive one, and every thing has been constructed in the best manner. The lecture rooms are in a large building, the college proper, that also contains a magnificent rotunda, the depository of an extensive and valuable library. The upper gallery of this rotunda is appropriated to objects of natural history, where I expected to have found complete suites of the Virginia naiades, and at least a collection of specimens illustrating the interesting geology of this great state: neither the one nor the other is there—excepting a suite of the tertiary fossils of the tide water marls; though they have a very fine mineralogical cabinet from all other parts of the world.

The road from Charlottesville passes through a fine rolling country, to the foot of the Blue Ridge that is crossed at Rock-Fish Gap, where the traveller is presented with a glorious prospect to the south and east. Here, we bid adieu to the "Old Dominion," and leave behind us the metamorphic rocks with their auriferous quartz and dykes of trap, a series that are exciting very great interest among geologists, some of whom have supposed that the micaceous schists and epidotic rocks of this region are altered shales, so modified by the irruptions of trap as to have lost all their external distinctive characters. On the western declivity of the mountain, the road is rough in consequence of the strata dipping to the south-east, but no opportunity was presented for tracing their connexion with the limestones of the "Valley of Virginia." These rocks appear identical with those of the Cumberland valley of Pennsylvania—they are all upturned at a considerable angle, and in some places, perhaps overturned, especially near the Blue Ridge. It is in such a situation that the celebra-

ted Weir's cave is found, and it is very probable that the confusion of the strata in the overthrow may have aided in the formation of this extraordinary and most beautiful cavern, the wonderful productions of which I shall not attempt to describe, as nothing but the pen accustomed to voyage in fairy land could possibly do justice to the surpassing beauty of the scene. The curious figures and memnonian sounds are alluded to in the following lines:

> In yonder grot
> Where forms fantastic hang on either hand,
> Where jewels glisten like the golden sand,
> And every tint that glows in western skies
> Is there reflected, as from Argus' eyes,
> While the mute gazer stands, or gropes along
> The pipes of crystal hail him with their song—
> For there — so far within the terrene world
> The rocks are struck, and music is unfurled.
>
> ANONYMOUS.

But leaving the cave and its poets, and returning to sober prose, I must advert to some of the general features of this "Valley." Bounded by the Blue Ridge and North mountain, it embraces a large extent of rolling limestone land, some of which is very fertile, and in which rise some of the principal rivers in the state. I am now nearly midway between the mountains, in an elevated region on the head waters of the Shenandóah. This town has been selected for its healthy and central situation as the site of several public charities, among which are the Lunatic Asylum, and schools for the blind, and for deaf-mutes The latter are still in their infancy, though a fine building is in progress for the mutes; the corner stone is to be laid with due ceremony to-morrow. Great additions are also making to the Lunatic Asylum, already a large edifice, but insufficient for the wants of the state. I

was gratified to find that the moral treatment was chiefly relied on in the management of this institution; at least, this appears the leading principle of action, and the happiest results are already flowing from it to this unfortunate class of sufferers, whose treatment upon the old one of cruel confinement, and even chains, has so often excited our sympathies. Dr. Stribling's judicious management, and the arrangements he has suggested for the comfort, entertainment and occupation of these unfortunate beings, are producing one among the numerous results of the reformation begun within half a century by the good Pinel. I have the annual report of the attending physician before me, but cannot at present notice it further than to extract some statistics which will prove interesting and useful:

	Males.	Females.	Total.
Old patients at the boginning of the year, -	37	35	72
Admitted since, - - - - -	19	13	32
Whole number, - - - -	56	48	104

	Males.	Females.	Total.
Discharged during tho samo period, -	16	8	24
Died " " " - -	3	4	7
Eloped " " " - -	2	0	2
			33
Leaving in the Institution, - - - - - -			71

Civil Condition.

	Males.	Females.	Total.
Married, - - - - - -	11	18	29
Single, - - - - - -	38	21	59
Widowed, - - - - - -	3	6	9
Unknown, - - - - - -	4	3	7
			104

Duration of the Disease up to the present time, discharge or death.

Less than one year,	20
From one to five years,	30
From five to ten years,	19
From ten to twenty years,	27
From twenty to thirty years,	1
	104

Respective Ages of Patients.

Under 20 years,	8
Between 20 and 30 years,	25
" 30 " 40 "	33
" 40 " 50 "	24
" 50 " 60 "	10
" 60 " 70 "	3
" 70 " 80 "	1
	104

Form of the Disease.

Monomania,	11
Mania,	48
Melancholia,	28
Hypochondriasis,	7
Dementia,	9
Idiocy,	1
	104

Causes in the thirty-five last Received.

Moral Causes,	14	*Physical Causes,*	19
Domestic affliction	4	Intemperance,	4
Ungoverned temper,	1	Ill health,	8
Family troubles,	4	Puerperal,	3
Disappointed affection,	1	Epilepsy,	3
Reverse in fortune,	2	Mastubation,	1
Religious excitement,	2	Unknown,	2
Intense study,	1		

	Males.	Females.	Total.
Of recent Cases, - - - -	13	7	20
Cured, - - - - - -	10	6	
Much improved, - - - - -	1	1	
Eloped, - - - - - -	1	0	
Died, - - - - - - -	1	0	

From these tables it will appear, that of recent cases (less than a year) from 80 to 90 per cent have been cured, and Dr. Stribling states, that of the whole number admitted since the improved system has been adopted, 43-100 have recovered. These are truly flattering results, which speak volumes in favor of the moral treatment, or a happy combination of exercise, occupation, amusement, freedom and restraint, with due attention to comfort.

But I must conclude this long letter, hoping to find something of interest to communicate to you from the western part of the State. J. A. W.

Art. II.—*A Case of Pregnancy attended by a remarkable discharge from the Uterus, followed by a safe Delivery.* By S. E. Leonard, M. D., of New Albany, Indiana.

About the 1st of September, 1840, I was called to visit Mrs. N. in her fifth pregnancy. She supposed herself to be between the fifth and sixth months of uterogestation; but of this she was entirely uncertain, judging alone from her having quickened about the 1st of August. Her menses observed their regular periodical return until within the last six or eight weeks, as they had done during her last pregnancy, which resulted in the birth of a child at the full period. I found her discharging water from the vagina, which gushed forth copiously, unattended with pain or dilatation of the os

tincæ. I also found the neck of the uterus elongated as in the sixth month. I enjoined rest in the horizontal position, and administered an opiate. The discharge ceased in a few hours, and the next day found my patient comfortable.

September 9th. After one week's intermission, the water again began to pour from the vagina, much more copiously than during the first attack, accompanied with a sense of uneasiness, and bearing down, rather than pain, in the pelvic region. To use her own language, she "felt as if the whole contents of her abdomen would come from her." For a few days past, she had been subject to periodical returns of fever, commencing every afternoon. Bowels torpid. Gave a mercurial cathartic, after the operation of which she had no return of febrile paroxysm. A very visible diminution of the abdominal tumour had taken place, in consequence, no doubt, of the immense discharge of water from the uterus, which in the two attacks must have been several quarts. Continued the opiates after the operation of the purgative, and still enjoined the horizontal posture. The flow of water continued, with occasional intermissions, for about forty-eight hours, at the end of which time a very considerable quantity of sanguineo-purulent matter was discharged.

11*th.* The abdominal tumour almost entirely subsided. Says she feels plainly motions of the fœtus.

12*th.* I learnt from her to-day, that she increased much more rapidly in size, than she had ever done in either of her former pregnancies. In one month from the first appearance of uterine enlargement, she was as large, or larger, than ever before at the time of her accouchement.

28*th.* Was again called in consequence of a return of the discharge of water, which had abated for about two weeks, and learnt, that for the last twelve hours water had been

flowing from the vagina in almost a continuous stream. Patient informed me that since it last ceased, her size had remained almost stationary, until about three days since, when her size began to increase most rapidly, and, in her own language again, "she became a complete burden to herself." The discharge commenced with a sudden gush. She still feels plainly fœtal movements. Upon making an examination can readily trace circumscribed enlargement of the uterus. Os tincæ not at all dilated; distinctly felt the water flowing from it. No uterine pain. This last discharge produced great prostration, and nervous irritability. She had taken rhubarb and soda in the morning, which operated slightly. Prescribed opium, 1 gr. every four hours.

The discharge continued longer and more profusely, than in either of the preceding attacks, but again ceased entirely.

October 2d. The respite was of short duration, as she was again attacked with the flowing of water, which continued for several hours; the latter part of which time it was highly colored with blood. This, though quite profuse, had but little effect in reducing the size of the abdomen.

4th. The water, to-day, is of a deep yellow color, and she thinks much more copious than ever before. I am well satisfied that she passed more than a quart of water per diem, perhaps double the quantity, for four or five days successively; on the fourth it was intermixed with lumps of matter, of a caseous appearance, as large as a filbert. Urinary secretion almost entirely suspended, not voiding it more than once in twenty-four hours, and not exceeding two or three ounces at a time. General health better. Water from vagina still of a deep yellow color.

10th. Found my patient in great spirits, sitting in arm chair contrary to directions, and quite comfortable. The

evacuation entirely ceased, for a few hours, this morning, during which time she suffered great oppression. On the renewal of the discharge she became again quite easy, and so remained during the day. Urinary discharge continues very scanty.

12*th.* Summoned hastily, and found her much alarmed, discharging blood mixed with water most profusely from the vagina; sometimes clots of blood alone. I immediately prescribed sacch. saturini and opium, with cold applications; enjoined the horizontal position, and absolute quietude. Upon examination I found the neck of the uterus as in the seventh month of pregnancy, and satisfied myself that there was neither entire nor partial implantation of the placenta over the mouth of the uterus; as well as that the discharge was from within the chorion, and not as I sometimes suspected from immense hydatids exterior to the membranes. The membranes being ruptured, I was able distinctly to feel one of the lower extremities of a fœtus.

13*th.* Discharge of blood continues, and although very copious, has but little effect in reducing vascular action. Stomach extremely irritatable; vomiting almost incessant; complains much of acidity. Gave alkalies freely.

14*th.* Vomiting more and more distressing; great præcordial uneasiness. No abatement, but rather an increase of the discharge from the uterus of blood and water. About five o'clock, P. M., called in great haste, and found, much to my relief, that labor had fairly commenced—it being the first time during the whole period of discharge, that the uterus showed any disposition to rid itself of its contents. Found the os tincæ dilating; nates of a fœtus presenting, which was delivered, weighing about three pounds. Uterine contractions soon returned, and a second fœtus was delivered, a ver-

tex presentation, of about the same size as the first. Both lived several hours.

After labor commenced there was no discharge of either blood or water. The twins were contained in one common involucrum, and consequently there was but one placenta. Patient continued to vomit incessantly until the birth of the first child, when it ceased entirely, and she became comfortable immediately after delivery. About ten days after delivery, she voided a large quantity of purulent matter, which continued occasionally for two or three days.

In three weeks after her confinement the patient left this place for the South in good health and spirits.

November 18*th*, 1840.

ART. III.—*A Case of Traumatic Tetanus successfully Treated.* By E. F. WILSON, M. D., of Louisville, Ky.

ON the 6th of July last, about 10 o'clock, P. M., I was called in great haste to see a female named Lavinia Hoover, aged about 19, robust, and of full plethoric habit. She was reported to me as being in a fit. I supposed it to be hysterical, but immediately obeyed the summons.

On entering the room where she lay I was at once by her appearance and attitude satisfied of my error, in supposing it hysteria, and the distortion of the countenance, the wrinkled nostrils and her position, which was bent backward, induced me to suspect she was suffering under a tetanic affection. This, I was informed, was her twelfth paroxysm. On making some examination I found the iris insensible to the light; the abdominal muscles very tense, and those of the back strongly

contracted. Her breathing was rather slow, the pulse nearly natural, if any thing, slightly excited.

Appearances induced me to question her attendant closely, as to whether she knew of any injury received by the patient within a short time previously; and my suspicions were fully confirmed by the following account given to me:

Between three and four months previously, while walking barefooted, she had trodden on a part of a broken phial, and wounded the left foot, about half an inch behind the ball of the foot. The injury had been dressed at the time by a medical gentleman, who also examined it but did not discover any fragments of the glass, the patient being unwilling to allow a thorough examination. It healed pretty well, but the part always continued tender, so that in walking the patient could not put the foot flat to the ground. Her general health was very good, and she still continued moving freely about, though occasionally complaining of some uneasiness in the part. At last, about the 3d of July, she felt an unpleasant sensation in the neck extending upward, and a slight degree of stiffness in the motion of the jaw. On the 6th, she had been using much exercise in walking about, and had also been exposed to damp in washing or some household work, when in the afternoon she complained of considerable increase in the pain of the foot, and of stiffness in the neck and jaw. She was then suddenly seized with a violent spasm, or, as those around her supposed, a fit, was carried up to bed, and spasm after spasm succeeded until I was sent for.

On examination of the foot I found the wound almost entirely closed, though with still some appearances of inflammation about it. I had not at hand any instruments with which to fulfil the pressing indication; namely, the dilatation of the wound, and the searching for and removal of any fragments

of glass which I believed must be deeply imbedded there; nor had I immediately at command any of the remedies commonly relied on, in such cases, to fulfil the second indication, namely, to relax the violent and involuntary contractions of the muscles. I determined, however, in the language of Mr. Gooch, "to stand to my guns." Something must be done immediately, or the patient must probably die. I fortunately recollected that I had with me some tartar emetic.

Of this I administered about grs. xv. in two doses, not with a view of producing emesis, for in the existing condition of things I did not believe this could be effected, nor was it. I now awaited its effects. In the course of an hour the muscular contractions had almost subsided, and great prostration ensued, the extremities becoming entirely cold. For this I had prepared, meanwhile, by having mustard at hand. I now applied sinapisms to the ankles, wrists, and epigastrium, and in a short time had the satisfaction of finding reaction had commenced. No unpleasant symptoms following, I directed the following prescription to be procured and given at once:

℞. hydrarg. submur. ℈i.
pulv. opii grs. ii.,

and an emollient poultice to be applied to the foot, and renewed, and left the patient for the night.

July 7th. Found her much better—had no return of the spasms and rested tolerably well during the night; she had had two dejections from the action of the medicine; her skin was tolerably moist; pulse regular; tongue slightly furred. The poultice, however, had not been applied as I ordered. Notwithstanding this omission, I now cut down and dilated the wound, and extracted four fragments of broken glass of more than a quarter of an inch in size; again

ordered a poultice, together with some mild purgative medicine and left her.

8*th.* Patient still improving. No return at all of spasms; bowels open; pulse and skin pretty natural; had slept well. Ordered poultice to be continued with mild aperients. From this time she steadily improved, and on the 7th day was walking about, apparently in as good health as usual.

It appears to me, that I may attribute the prompt and complete success of the treatment to the antimony, for as soon as its action commenced, there was an immediate alleviation of all the urgent symptoms; the muscles became evidently much relaxed, and after the exhibition of the second dose, but a few minutes elapsed before there was a complete cessation of their contractions. The calomel and opium were not given until after reaction from the effects of the antimonial had taken place.

I have not met with an account of any case where a similar course has been pursued in this disease; and altough it was so successful in the present instance, I would scarcely urge a like employment of this remedy except in the last resort. Yet the impressions left on my own mind, by its effects here, are such, that were I called to another case I should be tempted to use it in the same way, in preference to almost any other remedy.

The principal objection that could be urged against it, is the danger of exciting severe inflammation in the stomach. For such an emergency the practitioner might be prepared, by having at hand the means necessary to meet and combat it.

Several months have now elapsed, and excepting a slight attack of intermittent fever, the subject of the above remarks has enjoyed uninterrupted health.

Louisville, Dec. 20th, 1840.

ART. IV.—*A Case of Congenital Deafness, relieved by an operation performed by the patient on himself.* Reported for this Journal by S. M. KNAPP, Esq., of Winchester, Illinois.

SOMETIME in the month of September, 1839, I became acquainted with the subject of this paper, Mr. John Washington, a mute, directly from the Hartford, (Conn.) Asylum, where he had been prosecuting his education for nearly seven years. Finding him very intelligent and an accomplished scholar, I took the deepest interest in him from our first acquaintance, and was particular in enquiring into his history. His father, late of the city of New York, is now a resident of Troy, Missouri, and a practising physician of some eminence. Our friend left Hartford in the spring of 1839, on account of some difficulties between him and a member of the Institution, by which he incurred the displeasure of his father, and was thereby thrown upon his own resources. During his stay at the Asylum, he had made himself master of many branches of science, and also of the Greek, Latin, French, and Italian languages; besides collecting a vast amount of general knowledge, comprising an outline of the learned professions, and much definite knowledge of the materia medica. In this exigency, cast upon the world, and yet shut up within himself, some expedient must be resorted to in order to sustain his independent position. Knowing that his misfortune would be in some measure a passport to public favor, he resolved to travel and give phrenological charts of his own making. In this he succeeded well; his sense of feeling being very acute, he was uncommonly correct. By this means he arrived at the time above named, at this place. In conversation with him upon the cause of his

deafness on our first acquaintance, he referred me to several causes defined in medical works, and from them selected the case that he supposed corresponded to his own, which is described below in his own words. By experiments I satisfied myself that the eustachian tube was unobstructed, the nerve perfectly good, and that Leschevin's mode of operation would be successful in bringing him to his hearing. Indeed, so great was my faith in the experiment, that I once promised to operate myself; but on more mature reflection I shrank from the responsibility. By the various experiments that we tried his own confidence became so strong, that he resolved to operate upon himself. An account of the procedure is thus detailed by himself:

"In 1834, while travelling in the State of New York, I became acquainted with a Quaker lady who informed me, that she was once entirely deaf and mute; and from that time to the present, I have sought with avidity for all cases where the deaf have been restored to their hearing. As several successful experiments had been made in Philadelphia, some in New York and in Baltimore, I resolved, the moment I became of age, to have the operation performed. My reason for waiting till this age was the opposition I met with from my father, who would not have the responsibility rest upon himself during my minority. I was undoubtedly deaf from my birth; my mother, however, thought I could hear until ten or eleven months old, and then grew deaf; but my father was of a different opinion; upon this point my own memory does not of course serve me. I found, by examination, that among those that were born deaf, in about five cases out of nine the auditory nerve was more or less active; most of them could hear through the eustachian tube. Many could hear the ticking of a watch when placed in the

mouth, or anything which emits a piercing, acute sound; but the best way to try the experiment is to set the watch running down quickly, and a jarring will be felt in the ear, and a stinging sensation will remain for a day or two on the tympanum, and a violent headache is generally the consequence. In many instances, however, the auditory nerve is paralyzed, and of course all attempts to restore the patient will be useless. Many cases of deafness arise from sickness, in which a collection of pus takes place in the internal ear, and in the eustachian tube. Mutes differ in many respects: in some the meatus auditorius externus is entirely closed. In my case the tympanum was covered by a preternatural membrane, which, in fact, is the most common obstruction. After trying a variety of experiments I became firmly convinced, that a simple operation would restore me to the inestimable blessing and privilege of hearing. Acting upon this conviction, I conversed with my friends upon the subject; but, with the exception of one, they all doubted its practicability, and advised me not to have it done. Shut out, as it were, from the world, and firmly believing as I did, that a simple operation would accomplish the object, I was at last resolved to "do or die;" and, after reading Leschevin's mode of operating upon a similar case, I provided myself with a common thumb lancet, ground down to about one-third of its original width, so as to admit of its entrance into a common silver pencil case, with the point protruding about a line and a half, as an instrument with which to perform the operation. About a week before the successful experiment, I made the attempt, but the pain was so excruciating that I was forced to desist. *Ad interim*, I injected daily oleum amygdalæ and black drop, to soften the parts; and used every precaution to keep my nervous system in a state of rest. After several inter-

mediate attempts to "screw my courage to the sticking point," on Monday the 10th of Febrnary, 1840, I determined upon a final effort; and after taking a common half-pint tumbler about two-thirds full of Holland gin, I went into a room by myself, and after tying a bandage round my head in order to open the lobe of the ear and confine it back close to the head, so that by casting my eyes upon a looking glass obliquely I could see the opening of the meatus auditorius, I first inserted the tube, and through it the lancet; then, summoning all my energies, I plunged it in. There seemed to be a cavity between the preternatural membrane and the membrana tympani; but I had resolved to pierce the tympanum, and so pushed the lancet firmly through. I found the resistance greater than I expected. I then turned the tube around and made another, but slighter incision, directly across the first. After drawing the lancet out, I attempted to push the tube between the lips of the incision; but the pain of the operation, together with the sudden admission of air, threw me into a series of fainting fits, or, as I was afterwards told, a number of slight spasms. Retaining the tube in the ear I had a tight bandage tied over my head, and went to bed; but amid such agony that I could not sleep. During the night there was a whirling and dizziness in my head, with explosive noises, and flashes of light before my eyes, and slight discharges of blood and yellow pus through the tube. At first, all sound was blended into one distracting tumult. In the course of twenty-four hours after the operation, the ear became more accustomed to the noise, and learned to distinguish between sounds. One fact, however, at the time struck me as remarkable; that all things were capable of giving sound by being touched, and that every thing made a noise; or, to express it as I then thought, every thing, animate and

inanimate, contained within itself latent sounds. After the operation I put myself under the care of William H. Wilson, M. D., whose account is given below.

"Thursday 13th. A peculiar itching, tingling sensation in the bottom of the meatus auditorius externus, and a feeling as if the upper part of the cranium was gone, is all that remains of pain, except that acute noises send a thrilling sensation through the head.

"A mute friend of mine in this town will doubtless undergo the operation, and I am satisfied it will prove equally successful; should such be the case, notice will be duly given. Subjoined are the remarks of Dr. Wilson:"

"In the month of September last, Mr. John Washington, a mute, came to Winchester. He called upon me at my office to consult me upon the probable success of an operation upon his ear, such as is described in Cooper's dictionary.

"On the 10th of February he told me his intention to operate himself. I opposed his project, but all argument was useless. He prepared himself, as he has described, and operated with success, and heard and articulated, with some distinctness, next morning. I was called to see him, and found him laboring under a great amount of symptomatic fever. By the use of small doses of antimony and Seidlitz powders I reduced the fever; and since that time he has been comfortable."

Having given these statements, which may be fully relied on, I proceed to describe the progress of the individual in learning oral language. The morning after the operation he signified to me that he could distinguish sounds, and I entered upon a series of experiments to satisfy myself of the fact. By directing him to fix his eyes upon the floor, I uttered shrill sounds in different parts of the room, which in every instance

arrested his attention. But I was still uncertain whether he could define sounds. To be fully satisfied, I gave him a pen, and turning my back upon him directed him to make a stroke for each word that I should speak. I then counted ten in irregular time, yet I heard the scratch of the pen in time with every enunciation. With this every doubt vanished. I then tried to make him articulate the vowel sounds. The first three he sounded very imperfectly, but enunciated *O* with a full, manly voice. I then pronounced my own name, which he spoke with some degree of distinctness. Recollecting that I had often seen him attempt to make a noise resembling his own name, by first noticing the position of the organs of speech in other persons, I pronounced it upon his ear, and to the astonishment of all, he uttered it in a full, deep, sonorous tone, that sounded like a voice from the grave. I then retired with him to a room, and continued with him six successive days. During the first day he was feverish and somewhat delirious, and troubled also with a profuse sweating on the side of the body with the ear that was punctured. Considerable debility, for several days, was the consequence; but the tone of his nervous system is now, the eighth day, nearly restored. In the course of the second day he succeeded in enunciating all the sounds of the alphabet, and in fixing in his mind all the combinations of the vowel and consonant sounds; so that by spelling words as he saw them in his mind's eye, he was able before night to form intelligible sentences. From this time onward his progress was so rapid, that I could discover a distinct progress, from hour to hour; and by the close of the fourth day, he was able to hold a metaphysical argument, and clothe his ideas in such language as to convey every shade of thought and emotion. His voice was at first hollow, rough, and sonorous, but it daily in-

creases in compass, and smoothness, and his general health is nearly restored.

Many curious circumstances attend this case, which it is not necessary perhaps to detail. One fact, however, is too interesting to be omitted. Before the operation, he could recollect the appearance of his countenance as seen in the mirror; but afterwards that statue-like aspect vanished, and every line of his face was invested with an ever-varying expression, which he in vain attempted to fix in his mind. His eyes acquired a new expression; his lips became thickened and chiselled; his temper has become subdued; and his whole bearing is changed into something characteristic and commanding.

February, 1840.

ART. V.—*A case of Peritonitis, consequent upon Bilious Fever, terminating in a copious secretion of pus into the cavity of the Abdomen.* By. A. H. BUCHANAN, M. D., of Columbia, Tennessee.

ON the 10th of May, 1837, I was requested to visit a mulatto girl, aged about eight years, who had been seized forty-eight hours previously with bilious fever. About three years previously she suffered severely from scarlet fever, from the effects of which, however, she had entirely recovered, although of a delicate frame and rather feeble constitution. I found her laboring under the ordinary symptoms of bilious fever. By the use of the lancet, mercurial purges and mild febrifuge drinks, the febrile symptoms disappeared, and on the tenth day, believing her to be entirely convalescent, no further attention was given to the case. But in six days I was

again requested to visit her, and found her suffering with severe pain in the abdomen and sick stomach, which was thought by her mother to be colic. The abdomen was much distended and very tender to the touch. On inquiring into the particulars of her relapse, I came to the conclusion that this attack was produced by exposure to cold. She was bled, put into a warm bath, and ordered a dose of calomel, to be followed in six hours by castor oil; after which, a large blistering plaster was applied over the abdomen, and mucilaginous drinks directed. For two weeks her bowels were kept open by the occasional use of calomel and laxatives, with a gradual amendment of her symptoms. The tenderness and soreness of the abdomen had nearly subsided, and she was able to sit up; there was some return of appetite; but the pulse was quick and irritable, and she suffered from hectic fever, while the abdomen became more and more distended, and emaciation progressed. At this time, the end of five weeks from her first attack, she had nearly all the symptoms of ascites: the abdomen was largely distended, and fluctuation upon percussion was very perceptible; the urine was scanty and micturition painful. Believing that there was a serous effusion into the cavity of the abdomen, I put her upon the use of hydragogue cathartics for three or four days, but without the least benefit. I therefore determined to tap her, and accordingly, in the presence of Messrs. Brown and Pillow, students of medicine, and others, I introduced the trocar at the usual point in the linea alba, about two inches below the umbilicus, when, upon withdrawing the stilet, to my antonishment pus flowed through the canula, until about half a gallon was discharged. The matter had all the external appearances of pus discharged from an abscess of the cellular tissue, and had no disagreeable odour. The child

bore the operation well, and for five or six days improved in strength and spirits; but at the end of ten days the abdomen was as large as ever, and the matter pressed with great force at the point where the operation was performed, as if it would burst through. The trocar was, therefore, again introduced at the same point, and as much pus as at first was evacuated, the last ounce or two of which was thicker and of a greenish cast. The child now gradually improved in flesh and strength for eight or ten days, when the abdomen becoming again distended, it was thought advisable to let the matter discharge itself through the umbilicus where it now pointed. A poultice was ordered to be applied over the apex of the tumor, and in a few days the matter burst through at this point, and continued to discharge, more or less, for about three weeks, when the child appeared perfectly well, with the abdomen of the natural size. She has continued well, and grown rapidly, up to this date.

Observations.—When peritoneal inflammation does not terminate in resolution, the effusion of serum or of lymph is much more frequently the consequence, than that of so large an amount of purulent matter as occurred in this case. Such cases, indeed, are of very rare occurrence; although similar ones are mentioned by different writers on peritonitis. Baillie, in his Morbid Anatomy, observes, that "in some instances instead of serum a large quantity of pus is found;" and it is remarked by all pathological writers, that the effusion of pus is an occasional termination of peritonitis. M. Gase says, that he has known patients recover in whom the purulent matter escaped by the umbilicus.* M. Scoutetten also mentions a case; two cases of puerperal peritonitis which terminated in suppuration, and discharge by the umbilicus, are

* Quoted by Stokes in Cyclopedia of Prac. Med.: vol. 3. p. 294.

recorded by Gordon. Similar cases by different authors are on record; but it is remarked by Dr. Stokes that "It is doubtful when pus and lymph are effused in any great quantity, if they are ever absorbed, and such cases generally terminate fatally, or pass into the chronic form of the disease."* In the case I have related it is highly probable the disease would have terminated fatally, had not the matter been evacuated by tapping; for the child was extremely emaciated, and suffered much from hectic fever. Had I continued the use of the hydragogue cathartics the child would certainly have sunk; and had I delayed to the last the use of the instrument in the hope that the effused fluid would be absorbed, as is generally inculcated by writers on ascites, this child would most probably have perished. I consider it fortunate, therefore, that the trocar was introduced, and although I was not prepared to witness the evacuation of pus, I was immediately sensible on its appearance of an indescribable difference in the sensation produced on percussion in this case, and previous cases of ascites which I have met with. There was a greater weight, and a want of that perfect fluidity, which is present in the latter affection.

October 15, 1840.

ART. VI.—*Observations on a peculiar form of Bilious Fever.* By JOHN HARDIN, M. D., of Greensburg, Ky.

IN an essay on Congestive Fever, published in the first Number of the Louisville Journal of Medicine and Surgery, two cases were reported on account of a peculiar character-

* Stokes in Cyclopedia of Prac. Med.: vol. 3. p. 294.

istic. This peculiarity consisted in the copious evacuation from the bowels of mucus, as green as wheat, inodorous, exceedingly acid and incapable of communicating any tinge to water. Since the publication of those cases, the writer has had extensive opportunities to observe the same form of disease. The observations shall be detailed in the order in which they were made. The detail of a few cases will sufficiently develope the symptoms, course, and treatment of the disease under consideration. It will be borne in mind, that the two published cases, already referred to, were fatal in their termination; which is true of three of those that I am now about to report:

Case 1st. On the 13th day of April, 1838, I was called to the country to see Mr. D. M., æt. 23 years, of good constitution and sanguine temperament; found him with a general exaltation of the circulation, pulse quick and rather sharp than strong, tongue red and somewhat furred. Proposed v. s. to which he objected, if it could be dispensed with. Prescribed calomel, ipecacuanha and pulv. antimonialis every four hours.

15*th.* Visit repeated. Good bilious purging had been procured, and case seemed better. Prescription continued.

16*th.* Patient up; ceased to take medicine.

19*th.* Recalled; found a recurrence of first symptoms increased in intensity; prescribed calomel and ipecacuanha. For some days the case did not materially change; but after a sudden and severe alteration in the weather, which was not counteracted by a corresponding addition to the bed clothing, pneumonic symptoms were superadded. These were speedily subdued by cupping and blisters, and the case went on as before, except that there were irregular chills occurring once in three or four days. On the 25th the green mucous evacu-

ations appeared, with cool skin, small, weak, and quick pulse; intellect unimpaired. Prescribed calomel and sulph. quin. freely, with blisters to the stomach, wrists and ankles.

29*th.* Feeble reaction.

30*th.* Death closed the scene.

Case 2*d.* June 21st, 1838, I was requested to see Mrs. M., æt. about 20 years, of delicate constitution, who had, six weeks prior to this date, given birth to her second child. Symptoms; slight acceleration of the circulation, some dryness of the tongue, and constipation of the bowels. Prescription; mild cathartic pills, which gave so much relief, that the patient was up the greater part of the succeeding day.

23*d*, Recalled. Symptoms: small, weak, and frequent pulse, cool skin, dry brown tongue, pulmonary oppression. As I had not been the regular family physician, I apprized the husband of my opinion, that it would be a dangerous case, and suggested the propriety of calling an additional medical attendant. Two others were called, and for two or three days, sinapisms, blisters, calomel, quinine, carb. ammonia, seneka, and other articles were used, according to the indications of the case. The disease progressed; green mucous discharges speedily appeared; neither reaction nor secretion could be induced; two or three days after the appearance of the green mucus, gangrenous spots appeared on the gums, and under the tongue, from which there was considerable hæmorrhage. The alvine dejections continued unchanged to the death of the patient, which occurred on the 5th of July. In this case, also, the intellect continued unimpaired to the end.

Case 3d. July 19th, 1838—called to see Catharine, a servant, æt. 16 years, robust and fully grown. This girl had

waited on the lady whose case has just been detailed. Symptoms similar to those in that case, but more violent. Calomel, ipecacuan, and rhubarb were prescribed.

21*st*. Green mucous discharges; 23d, gangrenous and hæmorrhagic gums; green mucus continued to be discharged; general coldness of the surface; very small, weak, and frequent pulse; great pulmonary oppression. This was the fifth case of the same character, that I had seen, all of which had a fatal termination. I was unwilling that any more should die under the same treatment, although, *a priori*, I considered it the best that I could institute. I was satisfied that the pathology did not consist in portal congestion, or gastro-intestinal inflammation; and I recollected that in the winter 1832, '33, Professor Caldwell had suggested it as probable, that the reason why calomel did not readily excite the liver in cholera, was, that the ganglionic nerves supplying the liver were so oppressed by disease, that they did not convey to that organ its proper amount of nervous energy, and that, as a consequence, it was not susceptible to the impression of stimuli. If this pathological view was correct in cholera, and I thought it probable, the same condition might have obtained in congestive fever; and as the ganglia proceed from spinal radicles, this new view of its pathology suggested the propriety of strong stimulation to the spine, with the intention of arousing the nervous influence, and thus transmitting it to the organs requiring it. The gangrene of the mouth forbade the further use of mercurials, and under this aspect of the case, the following prescription was made: sinapisms to the whole length of the spine, and pills of rhubarb. In twelve hours there was general reaction, and in twenty-four, the alvine dejections consisted of a mixture of mucus and bile. Subsequent treatment—sinapisms re-applied

every twelve hours, and the bowels gently evacuated twice or thrice in the same time with rhubarb. Under this treatment the case slowly, though steadily, recovered.

Case 4th. Before my attendance on the last case was discontinued, Lucy, a negro woman in the same family, aged 25 years, was attacked with symptoms similar to those in it. A dose of calomel was administered, and once repeated; under the operation of the second dose, the green mucus discharges appeared. Sinapisms, as in the other case, were applied to the whole length of the spine every twelve hours, and the bowels evacuated with rhubarb. Under this treatment the patient speedily recovered.

Case 5th. Chaney, aged 12 years, a servant girl, belonging to the same family, being similarly attacked, a dose of calomel was administered which produced green mucus discharges, and dry, black gums. Sinapisms and rhubarb were used, as before, with the happiest consequences—the improvement was perceptible in twelve hours, and continued steadily to perfect recovery.

Case 6th. September 1st, 1838, I was requested to visit a youth, aged 12 or 13 years, of good constitution, who had been sick some twelve days. Symptoms—expressed himself as being free from pain; tongue dark red and very dry; skin rather hot; pulse too frequent and sufficiently full; restlessness very considerable. He had been in a similar condition to that just stated, from the commencement of the attack; had taken 25 grs. calomel every night, with rhubarb on the following morning, when the calomel failed to operate. Discharges represented as having been consistent and bilious from the beginning. The same treatment was continued for one night longer.

Sept. 3d. Gangrene of the gums apparent; surface cool;

pulse small, weak and frequent; alvine evacuations represented as being still consistent and bilious; but upon inspection were found to be a dark green mucus. Spinal irritation with mustard seed was used every twelve hours, and the bowels moved with rhubarb. Under this treatment the patient recovered, but was considerably endangered for some days by gangrene and hæmorrhage of the gums.

Case 7th. September 8th, 1838, was requested to consult in the case of a child aged 3 years, who had been sick fourteen days; disease supposed to be worms; between twelve and twenty doses of calomel had been given, and pink root in proportion. Present symptoms—cool surface; small, weak and frequent pulse; green mucous discharges; gangrene and ulceration of the gums, and of superior maxillary bone, beginning at the incisores, and extending backward along the palate bones, denuding them in their course, nearly to the velum pendulum palati. Treatment.—Sinapisms to the spine, with calcined magnesia and charcoal every two hours; sulph. cupri to the ulcers. The effect of this treatment was almost magical. In twenty-four hours the discharges were healthy; appetite good; reaction perfect, and every vestige of disease removed, except the gangrene of the mouth. This unfortunately continued, removing several teeth, destroying the upper lip and nose, and extending (before death, which did not occur for nearly three weeks,) to the forehead. During the greater part of this time, the general strength improved; the appetite was excellent, and the evacuations were natural.

Since the occurrence of the above cases, it has fallen to the lot of the writer to witness a vast number of others bearing a strong family likeness to them, but presenting great varieties in some of their features. The years of 1839 and 1840 have ben remarkably prolific in such forms of disease,

investing nearly all febrile affections with their liveries. In the cases narrated no regular, nor indeed irregular, remissions were observed; whereas, in the years 1839, and 1840, the chief part might with great propriety be denominated congestive remitting fever, and almost every medical practitioner in southern Kentucky, would under that term recognize their unwelcome annual visitant.

It is not my purpose to go into a formal detail of any other cases, but merely to give a succinct synopsis of my observations on the pathology and treatment of them.

My investigations have led me to the following conclusions, viz; that the disease consists, first in an oppression of the nervous system, and, as an unavoidable consequence, the equilibrium in the circulation is destroyed; that either of the above conditions is most certainly productive of diminished or arrested secretion, and great visceral congestions, which are very prone to run into sluggish inflammations and gangrene; that the green mucous discharges observed are not "*green gelatinous bile*", but a vitiated acid secretion from the intestinal mucous membrane, which results in ulceration; and that the predisposition in this form of fever to vitiated acid secretion is excited, and kept in destructive activity, by mercurials.

In all cases of ordinary violence, the respiration is very laborious, being performed, in a great measure, by the elevation of the shoulders, and failing to reach the bottom of the lungs, which renders it nescessary, every few minutes, to make a deep inspiration. During this state of the respiratory apparatus, there is an almost intolerable sensation of weight at the epigastrium, with feeble radial pulsation, and cool surface, especially of the extremities. In this condition, I have endeavoured to arouse and equalize the circulation by the

application of sinapisms, together with warm rocks to the extremities, without making the slightest impression, or producing the least redness under the mustard plasters. In the same cases and conditions, I have applied the counter-irritant to the whole length of the spine, and invariably with the most marked advantage. It has always aroused the circulation, warmed the extremities, removed the epigastric oppression, and often induced a warm, pleasant diaphoresis. In these cases, the tongue is often dry, brown in the centre, and fiery around the edges; the stomach is intolerant of pressure, and the whole group of symptoms forbids the internal exhibition of stimulants.

I have seen several cases where instead of mustard seed, blisters were applied to the spine, and with good results; but I prefer the mustard, because the intensity of its effects can be increased or mitigated at pleasure; and therefore the spinal cord does not become so accustomed to its stimulation as it does to that of a more permanent counter-irritant; and also because it is exceedingly difficult, not to say impossible, to confine the necessary dressings to a blistered spine.

I have said that a great number of these cases have remissions, and I may add that they are more difficult to manage on account of these remissions. A case may have existed and been under treatment for several days, or a week, and may seem to be doing well, when suddenly the voice will sink and become a husky whisper; the end of the nose and sometimes the extremities of the fingers and toes become cool, while the rest of the body evinces preternatural heat; the patient complains of a sensation of sinking, with alternations of hot flashes and slight rigors. This condition not unfrequently continues for four or six hours with great intensity, and it may require twenty four or thirty six hours for reaction to be as well es-

tablished as before the paroxysm. In a few cases death takes place in the first paroxysm; and if not arrested would usually do so in the second or third.

How are these paroxysms to be prevented? This is a question of great difficulty. The dry, reddish brown tongue, the great epigastric tenderness and heat, have always seemed to me plainly to contra-indicate the use of sulphate of quinine; and yet a recurrence of the paroxysm must be obviated, or death is inevitable. Under these circumstances I have given, several hours before the accession of the coolness was anticipated, 10 gr. pulv. Doveri, 5 gr. camphor, with a cup of hot sage or horsemint tea, and applied sinapisms to the spine and extremities, together with warm rocks to the hands and feet; and this practice has not disappointed me. It has uniformly produced the intended effect. I have not depended on spinal irritation alone to arrest these paroxysms, because the danger is so imminent, that I have felt disposed to employ every adjuvant within my reach. After arresting it once, the same means to a less extent should be subsequently used as the period of recurrence approaches.

January, 1841.

REVIEWS.

ART. VII.—*Outlines of the Institutes of Medicine; founded on the Philosophy of the Human Economy, in health and disease. In three parts.*

"Should we build facts upon facts, until our pile reached the heavens, they would tumble in pieces, unless they were cemented by principles.—RUSH."

By JOSEPH A. GALLUP, M. D.—*Author of sketches of epidemic Diseases in the State of Vermont*; late Professor of Theory and Practice in the Vermont Academy of Medicine, and of the Clinical school of Medicine; Ex-President of the Vermont Medical Society; Hon. Member of the Medical Society of the State of New York, &c. Boston: Otis, Boarders & Co. 1839.

SHOULD any of our readers allege to us that this title-page presents an aspect somewhat out-of-the-way and uncommon, we should hardly be so uncivil as to contradict them. Instead of thus unceremoniously plunging into collision with them at first sight, in either thought or feeling, we should be more likely perhaps to reply, "*so much the better.*" We like consistency and aptitude; and on that principle, this uncommon title-page very fitly ushers to the world a brace of "uncommon" volumes. For such is the character of the work before us.

We have not however yet said, nor do we indeed design

to say, whether it is uncommonly *good*, or uncommonly *bad*—or whether it is either the one or the other. We insist only that it is uncommon. On the score of its quality, our readers may, at pleasure, decide for themselves, by aid of the means to that effect, with which we shall furnish them; or, better still, by *purchasing* the books, as we have done, and reading them *verbatim*, from first to last.

The production before us, we repeat the third or fourth time, is uncommon; and the following are some of the particulars which make it so. It manifests in its author an uncommon amount and accuracy of reading, remembering, and recording, and uncommon earnestness in thinking, and in his propensity for theorizing. *His* thoughts and theories however are not always *ours*. But that matters not; they may be better than ours; and we shall not therefore condemn either them, or him on account of them, nor even find fault with them. Let their trial be held at the tribunal of the public—and fairness and justice will there be awarded them.

The work is farther uncommon on account of its old-fashioned elaborateness and formality—the number and brevity of its "Sections" and subdivisions, furnishing the reader with all possible convenience on the score of stopping, breathing, and reflecting places,—its abundant and perhaps unnecessary employment of certain words already existing, but almost out of use, and of its ready coinage of new ones, (the author proclaiming the entire insufficiency of the present meagre nomenclature of medicine to answer the demand of *improvement* and *discovery*)—and its rich store of facts, many of them sufficiently interesting and useful, and of opinions and notions not quite so valuable. To these may be added an uncommon proneness in the Doctor to the labour of "*definition*", in which complete success is never attained by mortals, (the faculty and

language of definition, according to an ancient sage, "*belonging only to the gods*") and an effort at uncommon precision in all things. Nor shall we charge the effort with fault or failure, except in the article of style, which we cannot admit to be, in every instance, either precise or classical, perspicuous or chaste. Yet it is generally intelligible; and we have reason to believe that our author has laboured it as sedulously and intensely, and esteems it himself at least as highly, as any other attribute of his books.

Such are a few of the grounds (and many more might be adduced) on which we have pronounced the "Outlines" uncommon; but have not on that account either praised them or blamed them. And we shall only add, under the present head of our remarks, that although every uncommonness, in science or letters, does not necessarily imply improvement or discovery; yet the reverse is not true. Every discovery and improvement must have something uncommon in it, else it would be in no shape an amendment.

But from the uncommon we must pass to the common and general qualities of the "Outlines", by which our readers will be much better enabled to judge of their merit. To speak more definitely on the subject; we shall now give a brief view of the plan which our author has pursued in writing them, followed by a few extracts from them, a careful perusal of which, next to a perusal of the entire production, will furnish our readers with the best means of working out a correct decision respecting their character.

Covering by it as he does, the entire ground of the Institutes or Philosophy of Medicine, our author has thrown his work into three grand "Divisions"; those of Physiology, Pathology, and Therapeutics; and in his treatment of each branch he has incorporated not only the result of his own ob-

servation, and reflection, but also much that he has derived from a long-continued and toilsome examination of the productions of many of the most distinguished medical writers of all countries, and of former times, as well as of the present. The amount of matter therefore, which he has amassed in his publication, into whatever shape his taste and fancy may have led him to mould it, or whatever covering of unusual and fresh-coined words he may have thrown around it, can hardly fail to be ample and useful. To convince the reader that Dr. Gallup knows how to begin his fabric at the beginning, and construct it from the foundation *upward*, as the case requires, instead of following the example of some who build from the roof downward, we submit to his inspection the following extract, under the several heads or subdivisions of "Ultimate Composition", "Organic Composition," and a few others.

Ultimate Composition.

"The process of destructive analysis of animal bodies exhibits various substances; such as phosphorus, the phosphate of lime, soda, magnesia, potash, manganese, sulphur, chlorine, iron, carbon, silex, alumine, and several neutral salts in small proportion. However, the phosphate of lime is very abundant, entering into the composition of the bones and giving them their solidity."

"By analysis of the body, either spontaneously or by art, are found the following gaseous substances, making parts of the constituent elements; oxygen, hydrogen, and azote, which may be confined. There are also, certain evanescent essences, in the living state, not confinable; as caloric, light, electric fluids, various gases, and the principle of *vitality*. These have more or less feeble combination with living organic bodies, and become evanescent before decomposition takes place. The principal elementary ingredients, which compose all the soft part in animal substances, are carbon, oxygen, hydrogen, and azote, in different proportions in the different organized elements; phosphorus and lime are the basis of the hard parts. Azote exists in the largest proportion."

"Chemico-physiological researches indicate many other substances in the human body, which some think have been constituents; yet they rather ought to be esteemed products, or secondary formations of vital organic influences. Many acids are found, as the sulphuric, carbonic, benzoic, uric, amniotic, oxalic, formic, acetic, malic, lactic, and rosacic, which last is found in lateritious sediment of the urine in fevers."

"*Organic Composition.*"*

"Upon a cursory inspection of the human body, it is found to give a moderate resistance to the touch; to be composed of what may be styled plates, or animal membranes of different degrees of compactness, and pierced in all directions by apertures of very different calibres; these constitute the *solids.* Within these openings or tubes, are discovered liquids, either red or white, which pass in different directions through the solid parts; these are called the *fluids.* It would appear at first view, that the solids exceed the fluids by weight; but, it is found on desiccating the body, that the fluids exceed the solids as about nine to one. However, they are quite different in different subjects.

"The diffuse, invisible, actuating principle of animal bodies has its residence in both these solid and fluid substances, but is most eminently appreciable in the former. However, the fluids sustain an important office in the economy of the system, and bear around in their circuits the rich fluid animal matter that becomes attached to the solids to increase their growth, or supply their waste.

It appears to be ascertained at the present time, that there are at least four primary animal formations, which by coalescing in various proportions, constitute the organization of animal bodies ;—these are *gelatin*, *albumen*, *fibrin*, and *mucus*; and some old *ozmazome.* These being vitally anima-

*The author wishes here to advise the reader, that his course in this arduous undertaking is intended to be a straight forward one; he cannot stop, *on ordinary occasions*, to give credit to various writers who may have richly contributed to improve the science of Medicine; and indeed, he scarcely feels able, in numerous particulars, to designate, whether the deductions he may advance have been formed by himself, or derived from others. Neither can he often stop to refute what he may suppose to be erroneous conclusions of others, and thereby interlard the work with contraries; but will endeavor to be satisfied, if he can arrange, and express his views in a manner to be rightly understood throughout the work.

lized molecules themselves, unite by a sort of peculiar formative affinity in the production of lines, or fibres; and in their turn these lines unite, by various crossings and interlacings, in the formation of tissues, or membranes. Again, these last, by a sort of plastic, formative impetus, generate what are called organs. If the process is not so formed as first to form lines as suggested, they are found in such a state, although the parts may have been formed in tissues by a gradual accretion, or elongation. Each of these primary animal elements merits some farther consideration.

"*Gelatin.*

"All the four animal constituent molecules before mentioned, are composed of carbon, hydrogen, oxygen, and azote, but in different proportions. Some physiologists have said, that gelatin does not possess any azote in its composition. But it seems now proved that it does, but not to the amount contained in fibrin. It is contended by some also, that gelatin is not found in the circulating mass of blood; however, this is shown to be a mistake, but it is found only in a small proportion.* The muscles, it appears, are first formed in the embryo, of gelatin, and afterwards recieve an addition of azote, by which they are converted into fibrin, which renders them more capable of contractility.

"Gelatin, or jelly, is extracted by boiling, from the tendons, bones, capsules of the joints, dura mater, cellular tissue, and all those membranes called by M. Pinel the fibrous membranes, of all which it is their principal constituent. They are called *fibrous* on account of their filamentary appearances. All these tissues seem to be formed by a condensed and modified state of the laminated or cellular tissue, for this is almost wholly formed of gelatin.

"It is represented by many experimenters, who have minutely investigated the subject, that the molecules of gelatin are not so large as those of fibrin. The tissues of which it is a principal constituent, possess a contractile property, but not so much so as tissues formed of either albumen, or of fibrin. It is probable, however, further observation may be required in order to be satisfied, whether gelatin or albumen possesses the most contractility. That all the tissues are endowed with more or less contractility is very manifest, otherwise they could not aid in the organic functions.

*Berzelius.

"The physical properties of gelatin are; 1st. It is soluble in water, but not in alcohol. 2d. It liquifies by heat, whilst albumen hardens by heat. 3d. It can be made solid by cold, and drying, but readily putrifies with water. 4th. It may be again liquified by heat, whilst albumen cannot be restored when once coagulated. 5th. It has a chemical affinity with tannin, and unites with it, by which union it becomes unliquifiable and insoluble. 6th. Uniting with tannin from the bark of astringent vegetables, in the skin of animals, it converts them into a dense, elastic state called leather.

"*Albumen.*

"This constituent of animal matter, receives it name from the albumen of the white of eggs, to which it is very similar. M. Cloquet says, it always contains sulphur, and subcarbonate of soda, besides the common elementary constituents. When in a fluid state it coagulates at about 165° of Fah. Alcohol, the acids, muriate of mercury, astringents, &c., coagulate it. Subjected to the process of drying, after being coagulated, it forms a solid semi-transparent substance resembling horn, insoluble except sparingly by alkalies.

"This substance is very abundant in nature, as it enters into the composition of both animal and vegetable bodies. In the human system it is found abounding in the serum of the blood, in the humours of the eye, and most of the secretions, particularly in the milk; and, also, in the white tissues. It is esteemed to be a principal constituent of the nervous pulp, throughout the brain and nerves; also of the glandular textures. It is easily extracted from other substances in combination, and its most delicate test is a solution of muriate of mercury.

"It exists abundantly in the seeds of vegetables, as well as in their roots, stalks, and leaves, It is, likewise, an important constituent of most of the tribes of insects, reptiles, and crustaceous animals, as well as the infusoria. As it is readily decomposed when subjected to warmth and moisture, it affords various volatile substances in the form of effluvia, more or less disagreeable, if not obnoxious. Old animals have in their composition the most albumen, whilst young ones possess the most gelatin. Seguin has shown it to be the most essential principle in the production of spontaneous fermentation of vegetable substances, thereby evolving saccharine, alcoholic, and acetic products. This substance is of much use in clarifying liquids; and, also, by inviscating poisonous

substances in the stomach, may disarm them of their deleterious influences."

The following is our author's somewhat curious, though not *original* speculation, respecting the *primitive formation* of living organized beings. Nor is it designed by him to contravene or question the Mosaic account of the process. It is only intended as a comment on that account, referring to it as authority, and offering an exposition of it.

"This power, this property, may hence continue to be known by the appellations of vital principle, vital force, vital energy, or simple animation, or life. Its peculiar influences in the human system may hereafter receive much amplification.

"*Its Origin and Source.*

If it should be inquired, from whence originated this principle;—it might be answered by retorting this inquiry, whence originated light, affinity, gravity, and other properties and essences in nature? That creative Power who said, "Let there be light and there was light," said also, "Let us make man in our own image,"—"and breathed into his nostrils the breath of life, and man became a living soul."* If the *breath* used in the narration should be considered a figurative expression, yet an influence must have been diffused into the inanimate body; and not only so, but coeval, and coextensive with the existence of matter, that all the other tribes of creation, both animal and vegetable, assumed portions of it necessary for their own individual economy.

"If the pride of modern philosophy will not admit of proofs, or direct allusions from the record of inspiration, it is hoped it will stoop so low as to admit it in collateral support of a thesis partially founded on analogical facts. The pride of philosophy must be truly humbled in the view, that no greater advances have been made in the science of life since the creation of man, and of a subject constantly presented to the senses, and to the understanding also.

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*Genesis ii. 7.

"*Illustrations.*

"It has been intimated, that this emanation of vitality is coextensive with the other properties of matter fixed on the surface of the earth, or floating in the air. It may be expedient to continue the illustration some farther. In the first place, a direct seminal influence, and sequal fecundation can scarcely account for all the phenomena of vitality noticed on the surface of the earth. Without being obliged to go into specification of much extent at this time, it may be remarked, as sufficiently proved by the investigation of geology, that various species of vegetables have been found in the transition, and after formations of the crust of the earth, which have become extinct. Again, others now vegetating are of modern origin. So of animals; natural history furnishes evidence of species, and genera of animals that have become extinct, and others have somehow sprung into existence; and surely, as far as can be discovered, without a direct seminal origin. Where are the giants of old? Here and there a petrified skeleton is found deep in the earth; and also, many unknown animals of huge dimensions, besides the mammoths, the tapirs, and hippopotami.

"We can form no conception of a seminal origin of the myriads of myriads of ephemeral insects that darken the air, or of reptiles which separate the foot of man from the surface of the earth. All springing into life at the same time, and simultaneously giving up the ghost, and becoming extinct. They appear again at uncertain intervals, and often having some slight modifications. A volume might be filled with facts on this subject; and indeed volumes have been.

"Stagnant waters imbued with some portions of albumen, gelatin, or fibrin, and probably other congenial animal substances, and when exposed to a high atmospheric temperature, soon become loaded with innumerable animacula of different genera and species, often visible, and often seen by the microscope. Neither caloric, nor oxygen, nor water combined, can produce organic beings, without a vivifying principle besides them, and then they act as auxiliaries."

"*Universal Generant Influence.*

"It is believed that those who have advocated the thesis styled spontaneous generation, have not gone so far as to designate very minutely the prolific principle, nor the substances it acts on. They commonly illustrate it by a rehearsal of

facts. It seems expedient, therefore, to follow up the subject a little further, without intending to exhaust it.

"In the first place let it be understood, that whatever scriptural allusions are made, it is not intended they should be received as strict philosophical evidence, but as collateral facts to aid the illustration of difficult subjects. We find then, that in the beginning, "the Spirit of God moved upon the face of the waters."* Let it only be noticed here, that the earth, and air both contain water. At this time, "the earth was without form." We will hardly dare to affirm, but have reason to presume, that a vital principle was at this time diffused in water, earth, and air. For we are immediately informed of the command, "and God said, let the earth bring forth grass, the herb yielding seed, and fruit tree yielding fruit after his kind, whose seed is in itself upon the earth; and it was so."† There is no mention of *seed* from which the herb germinated, but *yielding seed*, which was in the herb.

The phraseology, *whose seed is in itself*, may justly be understood as an influence imparted, and of a general kind, to the terrestrial elements, by the same Spirit which gave all the other properties to matter. The same breath which set these elements in motion, and determined the circuits of the heavenly bodies, also bestowed a principle of organic vitality, which is coeval with other properties of matter, and will be alike, or more enduring. It is as identical in its character as any other of the properties of matter, and none so fully displays the matchless beneficence of its Author. If the Pentateuch be admitted as a rule of faith in relation to divine subjects, why not in some degree respected in relation to subordinated correlative facts?

"Again, the same Creative Power, said, "Let the waters bring forth abundantly the moving creature that hath life, and fowl," &c. Also, "Let the earth bring forth the living creature after his kind, cattle, and creeping thing, "&c., and it appears that "God blessed them, saying, be fruitful, and multiply." There is no intimation of there being either in the vegetables or animals any seed from which they took root in the beginning, but the vegetables yielding seed for the nutriment of man, and the green herb for the use of animals; and both were apparently brought forth in a spontaneous manner. Although the seeds of vegetables were secondary in formation, and made for the use of animals, yet they do, for the most part, contain germinating points, like cuttings, from

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* Genesis i. 2. † Genesis i. 11, and onward.

which other series in succession are propagated. Admitting all that can be said in favor of a seminal propagation, it is no proof against a spontaneous origin of both vegetables and animals, under particular circumstances."

To give a farther illustration of our author's physiological creed, we deem it right to quote a few clauses, containing his views of what he calls the "*suction power of the heart.*"

"6. *Cardiac Vacuum.*

"Some notices have already been made in relation to the suction power of the heart, and on capillary attraction. By way of recapitulation, we may remark, that they imply too much of mechanical principles to be in accordance with all other vital movements. The cavæ serve as reservoirs of blood in a limited manner, and suffer an undulatory motion as the right auricle contracts and dilates; the blood rushes into the auricle and ventricle as they dilate; and we freely admit that the heart is endowed with an expansive power. By this mechanism a suction force does exist, and is extended so far as the large veins extend without valves. But, it is contrary to all analogy, and all the laws of physics and of vitality, to infer, that any suction power of the heart, assisted by atmospheric pressure, can cause fluids to be absorbed by the mucous tissue of the internal viscera, or by the serous tissues. These circulations, in the capillary systems, continue for more than twenty-four hours after a cessation of the heart, and respiration. So the sap in vegetables ascends only so long as they retain any portion of vitality. The veins fill, and become largely distended when ligatures are applied to them. Furthermore, capillary circulation can be expedited in numerous ways, without any agency of the heart. The absorbents take up congenial fluids, whilst mechanical suction might take up all fluid substances indiscriminately. Finally, there is as much evidence of a vital capillary action, as there is of such an agency in the heart itself.

"Admitting, then, a limited degree of suction force by the active diastole of the heart, as influencing the circulation in the large veins without valves, and which are surrounded by an osseous encasement, we may admit another mechanical force, which has some influence on the same extent of circulation. This has reference to the process of the expansion of

the thorax in the act of inspiration. The air rushes to fill the vacuum in the lungs, and a suction point is established in the whole thoracic cavity, and more space is given for the circulation generally. The jugular veins are seen to discharge their blood in the act of inspiration, and become turgid in expiration. The circulation through the lungs, also, is promoted by the dilatation of the chest, with the expanion of the vesicular tissues:—hence the panting exertions in forced respiration. Surely, in the fœtal life, the blood circulates without this force of thoracic dilatation, or any suction power, for there is a circulation before the heart is formed."

With the following descant Dr. Gallup introduces his Division of Pathology, which, to say the least of it, is sufficiently bold, uncompromising and independent. And, in these conforming, truckling, and popularity-seeking times, those qualities are meritorious and praiseworthy.

"SECTION XIII.

"1. *Preliminary Remarks.*

"Our illustrations will be conducted on the broad basis of investigation of the causes of disease, *Etiology;* the phenomena, *Semeiotice;* and the character of the morbid habit generally; or more strictly *Pathology.*

"The philosophy of medicine in all its relations, is of a peculiar character, and identical in its kind. It is in subordination to a force never found in purely physical matter; but amenable to a power which presides over organized substances, and influences their movements; alike persistive in the disturbed conditions of disease, as in the placid trains of the phenomena of health. This controlling influence is subject to various modifications from changes made in the organism by exterior circumstances, and the transition is often too easy from the normal to the disturbed state.

"The phenomena of disease are so far more intense than those of health, that the sufferer, and peradventure the medical attendant, when ignorant of the structure and functions of the organism, may be led to suppose that some additional *entity* is thrust in, and that he has new forms and sensibilities within the body, which never before existed there. The natural conclusion will be that these must be removed; and

nearly the whole materia medica may be tried empirically for this purpose, and yet the suffering may still continue. This is only one of the many false views of the character of disease.

"Neither does a certain assemblage of *symptoms* constitute disease. These are only the indicators of perturbed action going on in the tissues. They speak in legible terms to those who can read, and understand the language of physical impulses on vital tissues, and organs; and the responding motions excited, and displayed by an union of apparatuses, now show a discordance, which at other times were progressing in harmony. We cannot accord with the purblind views of those who say "all physiology as far as it is hitherto known, is totally or nearly useless in explaining any thing which happens in fever." "In short, fever is a disease, the whole of the appearances of which have been in no ways accounted for."* Discouraging indeed for the long labors of the amphitheatre, and the tortures of vivisections.

"Numerous have been the false views of disease, and often so entertained by whole communities, as well as individuals. Opinion has been marshalled against opinion, and of course the treatment has been as opposite as the antipodes. Public confidence has been impaired, and even personal opinion distrusted after tedious rounds of practical experience. Medical sentiments have often been neutralized, and of course made inert; or all theorizing has been abandoned, and the mutable symptoms of disease followed up as disease itself, with a blind zeal, when they are but the mere indices of their prototypes, or the injury inflicted on the organization.

"In consequence of these jarring sentiments, a well grounded assurance in the treatment of disease has been weakened; the way opened for the entrance of impostures, and the science of medicine stigmatized as uncertain, visionary, and conjectural. Poor recompense indeed, for the labor and zeal of ages bestowed on that art, which Hippocrates esteemed divine, and which was designed to relieve the distress of man, and prolong his existence.

"Such views ought no longer to be tolerated by men of enlarged information, and who are in possession of the immense store of facts elicited by modern improvements, in all the collateral branches of medicine. These are materials for forming a new generalization of the principles of medical science; and there is the more need of this, since nothing

* Fordyce on Fever, pp. 18 and 20.

efficient has been attempted for a long time past, and the labor and responsibility is so imposing, that it has been rather evaded by many most capable of undertaking the task.

"In the outset we indignantly repel the trite, sarcastic inuendos, which have so often uncourteously been cast by many; by direct allusions to theorems advanced, having been formed from lamp-light cogitations in the closet; and the bending of facts and analogies to support a favorite hypothesis. We have been inducted by another, and more hardy routine of study. And from the full conviction of the insufficiency of every generalization hitherto attempted, have reexplored, the chartless empire of medicine; and wishing to save it from the quicksand of empiricism, have made many comparisons in the open air, in the dissecting room, and at the "bed-side of the sick." Having a few incontrovertible data, as polar stars in view, we have *endeavored* to form inductions, which will not readily be dissipated by the fire of experiment. If the arrangement is new, it is supported by facts not altogether novel.

"If we are not able on all occasions to offer a satisfactory explanation of every phenomenon of disease; yet, it is posible the outlines of a system may be designated, which if it be not perfect, still may not be false."

In his "Etiology or Pathogeny," as he himself terms it—in plain English in his views of the CAUSES of disease, our author maintains some singular notions. Of these we have a specimen sufficiently striking, in confirmation of our statement, in "Section XXV," snbdivisions.

"1*st. On the general atmospheric Pestilential Afflatus.*

"REMARKS.

The history of diseases from the remotest period, even down to the present time, affords sufficient evidence of the prevalence of severe diseases at particular seasons, and far exceeding the ordinary amount. These periods continue sometimes several years, involving different countries and latitudes, or their inhabitants, more or less, in severe calamities. In some cities nearly half the population has been swept off in a short time, by one form of disease, whilst an-

other modification, under some other name, rages in another district with nearly equal severity; the loss may be one in ten, or one in three of the inhabitants. Man knows not where to flee for safety; nor can he escape its presence; for as the poet has expressed it, "a secret venom oft corrupts the air, the water, and the land.

"*Its Extensiveness and Effects.*

"There have been seasons when the vegetable productions were blighted with mildews by some secret taint; and although luxuriant, yielded but little fruit for the sustenance of man; when likewise, the beasts of the earth, and fishes of the sea sickened and died. At the same time, or in quick succession, an invisible something seizes on the bodies of men; they also sicken and are laid prostrate, and whole communities are filled with dismay. The picture is well portrayed by our medical poet Dr. J. Armstrong, and ought to be preserved.

'Of every hope deprived,
Fatigued with vain resources, and subdued
With woes resistless, and enfeebling fear;
Passive they sunk beneath the mighty blow.
Nothing but lamentable sounds were heard,
Nor aught was seen but ghastly views of death.'

"*Ingenerate Origin.*

"The question has arisen among Philosophers, what is the medium that sustains this noxious agent, and from whence did it arise? There are some facts, and much analogy in favor of its aerial existence; and this was the sentiment of the most ancient, as well as modern pathogenist. But from whence it came, and what its entity consisted of, has been a subject of speculation and hypothesis; it has escaped every scrutiny, and every test. It received different appellations as the writer's modified views of its character dictated. Hippocrates called it *to thion*, or divine essence. Diemerbroeck styled it *pestilential germ*. Sydenham referred it to certain *occult qualities* in the atmosphere; whilst Rush and others, denominated it an *inflammatory* constitution of the air. The Arabs in allusion to the same thing as producing the cholera, call it *El Hawa*, the wind, or blast that passes. Or it may be styled a *pestilent afflatus*.

"We will chiefly contend for the fact, that certain periods, embracing from three to ten years, or more, occasionally occur, in which destructive diseases prevail, and that there exists the strongest presumption of a wide spread contaminating influence in the common air, affecting the fluids, and vital susceptibility of all organized compositions, more or less; but, from what physical influences it arises, is yet a matter of conjecture. We know not much more, or different from the allusion of the Psalmist, when he spoke of "the pestilence that walketh in darkness, and the destruction that wasteth at noon day." Dr. N. Webster has compiled a very useful epitome of medical history, in which he endeavors to establish a coincidence, and dependence of pestilent diseases on planetary influences, in connection with the agency of electricity. On a former occasion,* we were inclined to advocate the thesis; but on further reflection have grown more sceptical. From whatever source it may have an origin, it must be very extensive, as it embraces a wide range of aerial surface.

"In Section vi. 5, a suggestion was made, with a view of exciting further inquiry, that an excess of vegetative life pervading the atmosphere might, by undue stimulation, affect organized beings. On the thesis of an all prevading vital aura, Sect. vi. 6, this suggestion is raised; and on the facts, that during the pestilent periods, and in districts suffering most, there is an excess of vegetative and animal life; that myriads of insects and reptiles appear; that the intellects of men are elevated, even to a degree of impassioned ardor, and often attended with broils and wars; that the procreative powers are increased; and finally, that the entire organism shows signs of a more than ordinary state of excitation.† The effect has commonly been assigned to the cause, in the hypothesis of decaying vegetables, and putrifying animals contaminating the air; whereas it is far from probable, that the same cause, which affords an undue increase of vegetable and animal life, may stimulate the living system to excess of action, and excite disease in some form. However, there is a great weight of testimony to show, that the decomposition of vegetables or animals does not excite disease, notwithstanding so much has been advanced on the hypothesis. Sickness often follows great scarcity of vegetation and; again a luxuriance accompanies, and follows severe epidemic diseases.

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*Sketches of Epidemic Diseases in the State of Vermont.

†See Tytler on the Plague.

"A considerable number of facts are put together by Professor Chapman, in an essay on the causes, &c. of epidemics; *Phil. Jour. Med. Sciences, No.* 18; which go to show very satisfactorily, that the effluvia of decomposing animal bodies do not produce disease, and nothing more than sometimes a temporary commotion. In the same work also, many facts are stated, showing an increase, and decay of numerous animals, of the lower classes, in seasons of devastating sickness. We may remark, that shallow waters have much albumen, and are filled with various kinds of vermin. He also makes this pertinent remark, in a casual manner; "It seems to me a much more rational conclusion; that this unusual fecundity is owing to the state of things of which epidemics are the effect." And further mentions the fact as occurring in yellow fever, of "the black vomit being found, during the life of the patient, so filled with animalcula as essentially to constitute that fluid." For a still more extensive collection of facts on these interesting topics, Dr. Webster's valuable work on pestilence, may be consulted with great advantage.

"We shall not urge this subject at present; but, if it be true, that there is an all prevailing vital aura, which sustains the immensity of organized beings, (Sect. iv. 6,) we may by analogy assent to the suggestion of conditions of excess, or certain concentrations like galvanism, and the manegtic aura; and in such an event, it may no doubt spur to excess the living tissues, producing disease; and, also, cause the ocean, earth, and air to teem with life prolific, bringing into existence myriads of ephemera to flutter in the sunbeams, and stay just long enough to declare their Maker's power."

Under the same general head we have a further exemplification of these speculations, in subdivision

"6. *Remarks on the late Cholera Afflatus.*

"A brief review of the late epidemic may afford some instruction on aerial influences, as it seems to be the most extensive, persistive, and destructive of any on record. It first appeared in Asia, and extensively in the region of the Gangetic Delta, in 1817; a country where it had for ages been known to be epidemic. It appears now to have arisen with some new modifications of severity, and as if its source was inexhaustible. Our geographical allusions are intended more

for atmospheric than for terrestrial boundaries. Reference may be had to various official reports from India of its extent and ravages. We can only remark that it passed in all directions, but its principal line of march was from east to west. Its devastations have reached from 20 degrees south latitude from the equator, to 65 degrees of north latitude, and more than 100 degrees of longitude, before making its transit over the Atlantic ocean.

"The particular routes of this destroyer of life have been quite irregular, but it progressed on an average about three or four miles a day westwardly. It has stopped and retrograded in its course; escaping some villages, whilst it revisted other cities, and at an unexpected time suddenly seizing on the favored ones; this is common to other epidemics. Its stay at different places was quite various, sometimes a few months, at others only a few weeks; yet hovering about, and occasionally becoming more aggravated. It loitered several years near the confines of Europe, and at length, as if it had gathered strength, in 1829 entered, visiting even the cold regions of Russia in summer and winter. In 1830 it reached England, Scotland, and made solemn progress in the south of all Europe. Before it bestrode the Atlantic, the most careful estimates of its victims amounted to fifty millions.

"The people of this western continent rested securely in the protection of the waters of the wide Atlantic. But, to us it appeared a frail barrier. In March, 1832, in an introductory lecture, the following sentiment was announced: "Even England, with her high oxygenated atmosphere, is not protected from pestiferous blasts. The cholera at this very moment proves, that science has not purged the atmosphere of malignant taints; it stalks triumphantly through every clime, and bends its proud steps towards the setting sun; decides the fate of battles, and too often defies the tardy use of medicine. Shall we claim protection from its embrace, either from our physical condition or our moral graces? Nothing short of Almighty clemency can shield us. This region has already experienced desolating sickness; a new combustion of atmospheric gases might again light up the torch of pestilence; in which event we might become the actors of other scenes and other times, as depicted by an elegant historian.

> "'Dire was the tossing, deep the groans; despair
> Tended the sick, busied from couch to couch,
> And over all death shook his cruel dart.'"

"On the 8th and 9th of June following, (1832,) the Asiatic Cholera, as it had been called, showed its frightful aspect at Quebec; fifteen sickened, and seven died on the ninth; some of these were emigrants just arrived, and some were citizens. The belief of its communication from one person to another, by those who knew not its character, excited great alarm, as it had done wherever it had appeared. Its rapid spread to Montreal, New York, Detroit, the great West, and South, and even South America, cannot be detailed here, but may be learned from many excellent treatises written by American physicians. Finally, the cholera afflatus in a period of about seventeen years, had nearly embraced every section of the earth, destroying people of different temperaments and habits. In 1835 it still loitered in many places, but was not so severe.

"One fact in connexion with the first appearance of the cholera on the American shore ought not to be omitted; which is, that there was an easterly or north-easterly wind, which prevailed very constantly for four weeks previous to the 11th of June, 1832, when it ceased. There was an almost continued dripping, and it might be called a rainy season, together with a degree of coldness which threatened to blight the prospects of agriculture. Surely the coincidence of so long continued wind, and the immediate appearance of the cholera, are worthy of notice.

"There appear to be numerous circumstances which favored the progress of the disease in particular places, and amongst particular classes of people, which cannot be noticed now. Notwithstanding it followed the low courses of fresh water, and seized on the profligate and enervated, yet afterwards it did visit high and dry regions, and affect the most healthy and circumspect part of society. The local and exciting circumstances will be considered in their places; but none of these can produce the disease without the predisponent pestilent afflatus."

Dr. Gallup is unfriendly to the belief, that masses of animal and vegetable matter, in a putrid condition, engender disease. In opposition to that doctrine he advances what he denominates "*Instances in proof*," which are as follows.

"In support of this last proposition, we will briefly advert to a few out of many facts which might be presented.

"In all parts of our own country, as well as in others, there are numerous slaughter-houses; and at every such place there arises a stench very offensive to those not accustomed to it; and yet, the people engaged in the work, or visitors, are not made sick by it; and it is even confidently asserted that those people are not so likely to be affected as others when sickness prevails.*

"In the anatomical dissecting rooms, now numerous even in this country, and greatly multiplied in Europe, no disease has ever been assigned as originating from them, although it had ever been supposed, that decompositions of human organization afforded the most noxious effluvia.

"In every farmer's barn-yard, in the country, in every house-yard, also, in villages and cities, there is usually going on decomposition in the warm seasons of the year, and often the effluvia are very offensive, and yet no disease prevails, perhaps, in six years out of seven; but, if there should be disease, how familiar it is to refer it to those disgusting gases? These offensive gaseous productions are chiefly hydrogen, sulphureted and carbureted hydrogen, ammonia, and carbonic acid gas: none of which, separate or combined, ever produce a pyrectic habit, even where greatly evolved in chemical processes.

"During the impulse of national fervor that afflicted revolutionary France, the existing powers authorized the breaking up of the graves of the ancient sovereigns at St. Dennis, as a kind of revengeful insult. It is represented by Mr. Howard, that there arose from the tombs a thick, dark vapor, extremely offensive, which produced sudden depression, and even fatal asphyxia in some of the wretches engaged in it, but no defined pyrectic disease ensued. All these kind of gases impress the nervous system of external relation, without very essentially affecting the great system of nutrition, the seat disease. (Sect. xvi. 3.)

"Another instance has often been alluded to by etiologists, as occurring at Paris, and published by M. Thoset, in the Jour. de Physique, 1791 † It consisted in the removal of

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* Dr. W. F. Edwards, "On the influence of physical agents on Life, p. 186, Phil. Edit. states, that at Montfaucon, in one of the greatest slaughtering establishments of horses, dogs, cats, &c. in the environs of Paris, "that the cholera affected scarcely any of the workmen." Also, by the advice of Dr. Duchatelet, that the workmen and their families, "are in general remarkably healthy."

† Phil. Jour. of Med. and Science, No. 17, p. 376.

the cemetery of St. Innocens, which covered about two acres of ground in the centre of the city, estimated to contain six hundred thousand bodies, which had been accumulating for six centuries; it occupied two years in removing it. The stench was quite insupportable, and often the mephitic vapors affected some of the laborers with dizziness, syncope, tremors, and even asphyxia, yet no fever occurred, nor any endemic prevailed.

"Other instances of the removal of cemeteries might be mentioned, and with similar results; and also, we might take into the account the manufactories of animal substances as the making of adipocire, candles, soap, &c. The extensive fisheries also; foul wharves, giving out complicated and disgusting effluvia, might he adverted to, and every reference would only confirm the fact, that neither endemic nor epidemic disease, has ever been shown to be generated by them, and that these gases exist in full profusion during the most healthy periods. Professor Chapman has done a service to medicine, in collecting many facts to support the thesis in his Thoughts on the Causes, Phenomena, and Laws of Epidemics, &c.

"Having a presentiment that the enlightened community of medicine will readily assent to the foregoing positions, this part of our subject may be relinquished, whilst we enter upon the other, and by far more laborious part."

It has long been a question very strenuously contested, whether *cold* be in its nature, a *sedative* or a *stimulaut?* And were the contest decided by the *number* of polls that have taken sides on the subject, the *sedative* doctrine would abundantly triumph. But we are not convinced that the *preponderance* of sound philosophical testimony, in favour of the *stimulant* doctrine, would not be equally decided and abundant. And if we mistake not the signs of the times, on the subject, the latter doctrine is now on the ascendant. Be this however as it may, it appears from the following clause, in his "Etiology," that our author is a believer in the *stimulancy* of cold.

"*Cold considered Pathologically.*

"One of the most unfortunate of all errors that has ever crept into pathology, is the hypothesis, that cold acts as a sedative on living animal tissues; or, that it debilitates them. It will on the contrary be contended, that cold is a positive agent, and acts on vital tissues as an astringent, or tonic. It is then quite easy to conceive, that an inability of function may be the immediate effect of its application, in any considerable degree. Yet, when high heat has been applied, the admission of cold becomes indirectly invigorating. Cold in an incompatible degree impedes the nervous energy, also the circulations and functions of organs generally. The condensation of tissues affects the minute nervous fibrillæ producing enervation, and insensibility to ordinary stimulations; it produces an inability of nervous energy, whilst the simple tissues are condensed.

"Cold applied to the surface, simultaneously affects the internal tissues. A state of enervation is more or less every where produced, yet often unequal. Innervation and circulation are impaired. Some tissues for a time may act in excess; but, when the effects of cold are in any considerable degree, the deficiency of function may be so great, that the instinctive energies cannot prevail, and life may be extinguished, even whilst the inmost tissues are held in rigid endurance."

On our author's "Synopsis of Nosography" we can dwell long enough only to say, that, for its length (and it is not short) it is one of the most elaborate and laborious American productions, in medicine, that our country has witnessed. It possesses nearly all the learning, but not all the unapplicableness to practical and useful purposes, which characterizes Dr. Good's monument of erudition and pedantry, patience and perseverance, on the same subject. Without any further notice of it however, we must pass to our author's third "Division" of his "Outlines;" his

THERAPEUTICS.

Here again our remarks must be few and brief, this article being already protracted beyond its intended limits. Although, under a critical examination, we could find much to except to, in our author's "Therapeutics," it is perhaps notwithstanding the least exceptionable, and the most useful "Division" of his work. True; without great modification, the practice he recommends would be altogether inadmissible in the treatment of our western diseases. The reason is plain. It is suited to the complaints of a far different situation and climate—we mean New England. In speaking respectfully of it therefore, we regard it only in its relation and aptitude to the maladies of that region. As easily could Dr. Gallup devise and mature a successful scheme of buffalo and bear-hunting, without ever having seen a buffalo or a bear, a wilderness or a prairie, as such a scheme for the treatment of the fierce diseases of the Mississippi Valley, without having practised on them. In the treatment of the complaints, with which he has been conversant, we are inclined to believe him a skilful practitioner. Under the head of "*Pharyngitis, Laryngitis, and Tracheitis*" he has given a few paragraphs, which will be read, as we feel persuaded, with a deep interest, by every American. We allude to his exposition of the errors, neglect, and inefficient practice, which led to a fatal termination in the last illness of Washington. The following are his remarks on that subject.

"The medical reputation of the United States suffered not a little obscuration, and the nation an irreparable privation, in the death of General Washington at the very close of the last century, by an imbecile, doubting management. It is not pretended but that he was himself in fault; so like many others in high stations, skilled in every thing, except what

relates to the character of disease. After an exposure in December, on horse-back, he had hoarseness and sore throat, but called it a *cold*, and said in the evening, "Let it go as it came," as stated in Paulding's life. So nothing was done. He read newspapers on the evening of Friday, and "had been remarkably cheerful all the evening." Went to bed as usual. Between two and three o'clock had a rigor; but made no alarm, and still had nothing done. Early in the morning of Saturday was found, "breathing with difficulty, and hardly able to utter a word." Whenever he attempted to swallow, he became "convulsed and almost suffocated;" at the same time "some phlegm followed" the return of vinegar, molasses, &c. attempted to be swallowed. This was, no doubt, a complicated case of laryngitis, associating other contiguous tissues, and producing pharyngitis, with some appearance of tracheitis.

"An overseer attempted to bleed, without any previous preparation by external warmth; he obtained half a pint, when Mrs. Washington interfered, and had it stopped. Dr. Craig arrived next day, at nine o'clock, A. M. He put an epispastic on the throat; took more blood; again bled; and repeated at three o'clock, P. M. No account is given how much, but it "ran very slowly, appeared very thick," and no doubt it might have been added, was very dark. Bleeding without other adjuvants is commonly useless. However, "calomel and tartar emetic were administered, without effect." At five o'clock, P. M., he said, "I find I am going, my breath cannot contiue long." He languished until about ten o'clock, P. M., and expired December 14, 1799. From the time of the rigor about twenty hours.

"No doubt this case demanded the most efficient constitutional as well as local treatment, and an at early period. At a later period there might have been some chance of success. It might be inquired, at what later period of the disease there existed a fair chance of relief. His case required diligent attention at the time he went to bed; then it is probable a pediluvium, and an emetic followed by sweating, would have been sufficient; especially with venesection after the surface became warmed.

"At the time of the rigor, the morbid changes had proceeded so far as to require very vigorous measures. He then ought to have taken the universal warm bath for twenty minutes; or mild steam well applied might have been a substitute, but never an equivalent. Then copious bleeding, even to faintness, closely followed by an emetic of tartarized

antimony. Warmth continued with diluent aromatic drinks, as hyssop, pennyroyal, &c., followed by copious and continued sweats. Instead of an epispastic to the throat, as was done in this case, an extensive emollient cataplasm of linseed meal and wheat bran; first anointing the throat with the anodyne saponaceous balsam, or some camphorated oil. Also, cataplasms with mustard seed flour, to the whole of the feet. All should have been done and repeated in the most perfect manner, under the immediate inspection of the physician.

"But, no physician saw him, to prescribe, until Dr. Craig arrived at nine o'clock, A. M. Important time had been lost: the appearances were inauspicious. Still, however, the patient ought even at this late hour, and in a disease making awful strides, to have had the chances of relief, and this was the last hour that presented much prospect. As nothing can be gained in these cases if caloric in a humid form to the surface is neglected, he ought to have had all the measures diligently applied, as mentioned before, at three o'clock, the time of the rigor.

"An emetic was indispensible at either of the periods. Although the difficulty of swallowing was great, yet at either period it is probable a little of a concentrated solution of tartarized antimony might have been got down, or at any rate by frequent trials, some might have been absorbed in the fauces. At the same time the epigastrium might have been bathed every ten minutes with a warm and strong solution of the same. Furthermore, a scruple of the same article in solution, might have been injected as an enema. By persevering, there is but little doubt, emesis might have been effected. The influence of this process on the general capillary systems was as much needed, as its utility in dislodging phlegm from the trachea."

We regret that a want of room prohibits us from giving extracts from the "Outlines" explanatory in full of our author's mode of treating pulmonary consumption. The treatment is bold, and, according to his report of it, unusually successful. In consequence of this, he speaks of the complaint as being much more tractable, than it is generally considered—especially if it be encounted at an early period. The remedies on which he chiefly depends, are the warm bath and blood-letting *often repeated*, and sometimes long persevered in, emetics

regulated exercise, and a diet mild, and easy of digestion.

The Doctor illustrates his practice and its success in this complaint, by a detailed report of his treatment of two cases, highly threatening, but which terminated favorably. His entire account of the malady we deem curious and interesting, and earnestly recommend it to the attention of physicians.

But we must here close our article. And we do so by again repeating, that Dr. Gallup's "Outlines" contain much matter that is valuable, mingled with not a little that is totally useless—if not worse. By physicians sufficiently enlightened in their profession, by experience and observation, to be able to adopt and reject, in the contents of books with judgment and skill, the work may be read with no little benefit. And the same may be done by medical pupils, whose studies are superintended by vigilant, faithful, and competent preceptors. But, without such superintendence, we cannot recommend the work as a text-book for the elementary studies of youth.

In conclusion: there are two points (the *beginning* and the *end* of his paper) where a reviewer may speak not only of the general character of the *work* which he reviews, but also of the nature and character of the *subject* of which it treats. And as we did not touch on the latter topic, in the *commencement* of this article, we shall briefly advert to it in its close.

The "Institutes of Medicine" embracing, as they do, the principles and philosophy of *all the other branches of the profession*, are, of course, the *highest and most important* of all. Without them medicine would not be an *embodied science*; but only an assemblage of kindred, but disjointed, and empirical pursuits. The Institutes are the life-blood—the soul of the profession, without which it would be even worse than

inanimate and inefficient—it would be a scheme of *haphazard* action, much more likely to do mischief than good. It would resemble navigation, deprived of the aid of its chart and compass. Its making good its course to the wished-for haven, would be a matter of accident—the chances against its arrival being *multitudes to one.*

If this representation be true, (and who will gainsay it?) to write a work on the Institutes of Medicine is an *arduous*—it would be hardly extravagant to say—a *mighty* undertaking. Its accomplishment in a style and degree of *general* excellence worthy of its subject requires talents and attainments, industry, perseverance, and a lofty ambition, which belong to but few of the medical profession—or of *any* profession.

The production of a competent work on the Institutes requires in its author a thorough, minute, and accurate knowledge of every other branch of the profession. Nor is this all. Not only must he be in possession of the almost boundless multitude of *requisite facts.* He must have so clear and correct a perception of their *relations to each other, and to their aggregate*, as to be able to deduce from them the sound abstract, and general principles, which they are calculated to sustain. To be qualified to do this, he must be amply endowed with *all* the intellectual faculties, especially with those of the highest order; (we mean the *reflecting*) and those faculties must be strengthened and rendered dextrous in action, by assiduous and skilful cultivation and practice. In a word, he must be, in the full and genuine meaning of the term, a Medical Philosopher. And of such characters the number that has adorned the profession of medicine is small. It would not be extravagant to say, that, since the days of Hippocrates, there has not been one for each succeeding century—not one we mean of the *highest rank*, and competent to the achieve-

ment we are now considering. So true is this, that there does not exist at present, in any language with which we are acquainted, a single work on the Institutes of Medicine, worthy in all respects of the momentous subject. Many such works are high in merit; but they are all below the standard they should attain. Nor do we mean by this assertion to disparage the Medical Faculty of either the present or former times. Our only object is, to express our own estimate of the exaltedness of MEDICAL PHILOSOPHY, and the arduousness of ascent to the pinnacle where it perches. C. C.

Selections from American and Foreign Journals.

On Pain of the back in remittent Fever.—Dr. Kreamer, of Aix-la-Chapelle, in a work on intermittent Fever published in 1837 asserts, that in all the intermittent fevers he has had an opportunity of observing, there exists at the situation of the first dorsal vertebra, a more or less severe pain on pressure. In order to perceive the symptoms, the pressure must be made from behind forwards, with the fingers upon the spinous process of the individual vertebra, not upon several vertebræ together; for in this latter case one bone is less affected in its relations with the others than in the former. If the intermittent fever is considerable, or old, or masked, pressure on the first dorsal vertebra, by giving pain, will suffice to evince the existence of fever. In simple or mild cases, the pain may be but trifling, and may require, particularly in phlegmatic individuals, that the attention may be directed to it; and in order to render it evident, pressure should be first made on the first cervical vetebra, then on the last dorsal, und then lastly on the first dorsal, when the patient may be asked if he feels any difference in the sensations produced. The pain exists during the paroxysms, as well as in the apyretic interval, is stronger in epidemic than in sporadic intermittent fever, exists in all forms, and continues during the sequelæ,

Dr. Grossheim has examined fifty cases of intermittent, with a view of testing the correctness of the above opinion, and the following are the results of his observations:—"1st, pain on pressure on some part of the spinal column is a constant symptom of intermittent fever, except in those cases in which the ligaments of the vertebræ have become by age or disease so rigid that they will not yield to pressure. 2. There is no definite locality to this pain; it may be situated in any

part of the column, but is most frequent in the middle of the dorsal portion, especially in quotidian intermittents. 3. The extent of the pain also varies considerably; one or two vertebræ only may be tender; and the pain rarely occupies the space of more than five or six; it may also be situated at distant parts, with intervals in which none is excited by pressure. 4. The intensity of the pain is equally variable. Sometimes it was so severe that the slightest touch of one of the spinous processes produced severe suffering; but sometimes violent pressure was required to detect it. Among those vertebræ that excited pain when pressed, the middle one was commonly the most sensitive; and in those above and below it, the tenderness gradually decreased. 5. The pain was more severe during the paroxysms than in the intermissions. When the severity of the fever diminished or the tendency to its returns grew less, the severity and the extent of the pain in the back also decreased; but the complete removal of the fever was not always accompanied by the entire loss of the pain, which often continued in a modified degree after the fever had ceased to return, and remained the longer the more severe it had previously been. 6. Complications of the intermittent fever did not appear to have any influence on the pain; it continued when the character of the fever was altered either for the better or for the worse, and it returned in cases of relapse.

From observing the constant resistance of this symptom, the author was induced to try what would be the effect of remedies that would tend to correct the local excitement that seemed to exist. He relates very briefly five cases, in which eight or ten leeches were applied over the spine in the situation where pressure gave the most pain. In four of these no other remedy was required; the pain ceased in a few days, and there was no recurrence of the febrile paroxysm.—*British and Foreign Med. Rev., July* 1839, *and Oct.* 1840. *Am. Jour. Med. Sci. for Jan.* 1841.

External Application of the Oil of Ergot.—Mr. Wright has found this oil a valuable external application in cases of local rheumatism. He has tried it in three instances, and in all of them it has proved curative. The affected part should be well rubbed with it for a quarter of an hour, night and morning, until relief be obtained. It is one or the best remedies with which he is acquainted for the cure of toothache.

He has repeatedly known it to subdue the pain when kreosote has failed. But perhaps its greatest value, as an external application, is in the arresting of hæmorrhage. He has often wounded small arteries in dogs and rabbits, and subdued the bleeding with a drop of this oil. Hæmorrhage from the jugular and femoral veins has been similarly arrested. The troublesome bleeding which sometimes follows the extraction of a tooth, and leech-bites, it is equally efficient in stopping.

In a severe case of epistaxis, he arrested the hæmorrhage, by injecting up the nostrils equal parts of very dilute spirit and oil of ergot; and he has little doubt that in the severe cases of flooding which succeed delivery, the injection of this oil diffused through water into the uterus would be productive of the happiest results.—*Edin. Med. and Surg. Jour.*, July 1840.—*Ibid.*

Solution of Bi-chloride of Mercury in Itching.—Dr. Prus states that he has often succeeded in the treatment of prurigo, an affection often obstinate, in the old men under his care in Bicêtre, by means of lotions night and morning, over all the parts where the pruriginous papules exist, with a solution of bichloride of mercury, one drachm in half a pint of water.

Mr. Duparque employs with benefit the same solution in pruritus of the internal surface of the labia pudendi, which occurs in some females in the decline of life, and which is often intolerable and difficult of removal.—*Jour. de Connaiss. Med.*, May, 1840.—*Ibid.*

On the Causes of Scrofulous Diseases.—M. Lugol proposed to himself the question whether scrofulous diseases ought to be regarded as the result of accidental external causes, or that of a hereditary predisposition? And the conclusions to which he has arrived are the following:—

The accidental causes do not necessarily produce scrofula, at least it is very doubtful whether they are alone sufficient to produce the disease. The production of scrofulous diseases, however, by hereditary descent, is the most common and the most clearly proved, and which we are enabled to trace in the great majority of instances.

The appearance of scrofula in one child is a sure sign of the whole of the rest of the family inheriting the scrofulous con-

stitution, by virtue of which all the other children have the same original predisposition to the disease. If the families which betray the marks of inheriting a scrofulous constitution are observed with care, it cannot fail to be remarked that they are subject to a great mortality. Scarcely a fourth of the children who are born attain the age of puberty, and it is by no means a rare occurrence to find that families, originally very numerous, have been all cut off even before they reached this period of life. Scrofulous disease, in fact, is one of the most active causes of mortality of the human race; there is no other disease which cuts off so many and so young victims.

In his memoir, M. Lugol endeavours to show that parents who are at present apparently free from scorfulous affections, and yet beget scrofulous children, can, in almost every instance, be traced to have had brothers or sisters who have been affected with scrofulous diseases, or have themselves been the subjects of some scrofulous affection in early childhood. There have also been seen instances of scrofula appearing in the parents, after having had born to them scrofulous children. He consequently arrives at the conclusion, that hereditary diseases do not pass over a generation, as has been generally supposed,—*Edinburgh Med. and Surg. Jour.*, July, 1840, from *Comptes Rendus*, January 20, 1840. *Ibid.*

Treatment of local Paralysis by Phosphorus.—Several German writers very strongly recommend the use internally as well as externally, of phosphorus in cases of paralysis of the optic and auditory nerves.

In a case related by M. Dezeimeris in his late elaborate memoir on diseases and injuries of the frontal sinuses, where deafness and blindness on the left side supervened upon a severe injury of the head, he resorted to this treatment with success.

He prescribed as follows:

℞ Phosphori gr. j, solve in
Olei animalis æther ʒj,
Olei caryophyll. ℈j.

Dose.—Three drops, to be gradually increased to 20, to be taken on a piece of sugar night and morning. And

℞. Phosphori gr. ij.
Olei animalis æther ʒj.
Olei cajeputi ʒss. Solve.

The eyelids to be well rubbed with this embrocation three or four times daily,

A blister also was applied upon the mastoid process and kept open.

In four weeks the patient had quite recovered his hearing and sight.—*Med. Chirurg. Rev.* Oct. 1840, from *L'Experience. Ibid.*

New Operation for Prolapsus Ani. By M. Robert—Relaxation of the sphincter ani being the cause of this disease, all the remedies hitherto employed for its cure are inefficacious when it arrives at the last stage, as they can only act on the mucous membrane of the rectum. These reflections have induced M. Robert to shorten the sphincter in proportion to the amount of relaxations, so that the two cut surfaces of the muscle might unite and form a narrow ring to oppose to the descent of the mucous membrane. This operation was performed with success on a washerwoman, thirty-three years of age, in June, 1839, in the hospital of La Pitié. This woman in her third pregnancy had a prolapsus ani, which was only temporary though it caused some pain. Her fourth pregnancy produced a prolapsus uteri, a permanent and considerable prolapsus ani, with relaxation of the abdominal walls. M. Robert excised a portion of the mucous membrane with some temporary relief; but the disease afterwards increased, the discharge of fæces became involuntary, and she suffered from pains in the loins and upper part of the thighs. When she entered the hospital the sphincter was so much relaxed that four fingers could be easily introduced.

The patient having been prepared for the operation by progressive diminution in diet, and the use of opium in order to effect long-continued constipation, M. Robert proceeded to operate in the following manner:—An incision was made on each side of the anus, each incision being commenced a few lines external to the orifice, and carried backwards towards the coccyx. The fold of integument between the incisions, together with the portion of sphincter it covered, were removed, and the muscle was thus shortened by half its length. The wound was united from one side to the other by three points of suture. On the sixth day after the operation the sutures were removed. Union was nearly complete, but a fistulous passage remained from the anus to the coccyx. On the fifteenth day the woman had not passed any fæces. On the next day the want of defecation being felt, in order to prevent any straining, the bowels were relieved by the cu-

rette. On the forty-first day the patient, who before the operation could not retain her fæces, kept an injection during the whole day; there was no more prolapsus; the opening had become of the ordinary size; but the finger when introduced did not experience the energetic contraction of the sphincter which occurs in the normal state. With the exception of a slight protrusion of mucous membrane the cure was complete in August.—*British and Foreign Med. Rev.* Oct., 1849, from *Gaz. Med. de Paris*, June 20, 1840. *Ibid.*

New facts with regard to Strangulated Hernia. By M. Laugier.—Every one knows that in strangulated hernia, the upper extremity of the intestine, or that part which is comprized between the stomach and the seat of strangulation, becomes distended by fluid, gaseous, or fecal matters, whilst the lower portion remains flaccid, or, at least, the matters found in it do not distend it more than usual.

No attempt has yet been made to draw practical inferences from this fact, so as to use it as a means of distinguishing intestinal from omental hernia; or which portion of the intestinal tube, whether the large or small intestine, was contained in the hernial sac. This has, however, been done by M. Laugier, who considers it both as a simple and sure means of diagnosis, besides possessing the additional advantage of indicating the relative urgency of the case for operation. The results of his observation are embodied in the following conclusions.

1. The extent, the form, and seat of the meteorism of the belly, during strangulated hernia, vary according as the hernia consists of omentum or intestine, and according as the upper extremity consists of the small or the large intestine. Its extent varies also according as the portion of small intestine included in the hernia is more or less distant from the stomach.

2. In omental hernia, before the development of peritonitis, the belly is soft, and flat even in the neighborhood of the hernia. There is no meteorism.

3. Meteorism appears very rapidly when the hernia consists of intestine.

4. When the hernial sac contains the large intestine, the sigmoid flexure of the colon for example, the upper extremity consisting of nearly the whole of the intestinal tube, the meteorism is general, and gives to the abdomen an almost cylindrical form.

5. If the small intestine is alone in the hernial sac, or along with a portion of omentum, the flakes and the epigastric region are soft and depressed: the swelling of the abdomen occupies the hypogastric and umbilical regions. The swelling is spherical, or nearly so, resembling in this respect some encysted tumours, or the uterus at the sixth or seventh month of pregnancy, from which, however, it differs in many essential characters.

6. When the strangulated part of the intestine is near the stomach, the swelling of the abdomen is trivial, in proportion to the duration of the strangulation; for in that case the upper extremity of the tube is only of small extent.

7. From these facts may be deduced the unexpected and important conclusion, that in crural hernia, and in some inguinal hernias, where gangrene is most to be feared, all haste should be used either to reduce it by the taxis or by operation; for if by the occurrence of gangrene of the intestine an artificial anus should be formed, its proximity to the stomach renders it more dangerous for the patient. A swelling of small extent, limited to the neighborhood of the hernia generally, inspires a security which may lead to fatal results; whilst it is the general meteorism, or one, at least, which is very extensive, that alone permits of delay, since it indicates the incarceration of a portion of intestine which is far from the stomach.

8. It is only before the accession of general peritonitis that the characters of the windy swelling, above indicated, can be relied on; they are most marked at that stage.

M. Laugier adds, that these remarks have been all verified by careful clinical observation, and by the result of many operations for hernia.—*Ed. Med. and Surg. Jour.*, July, 1840. from *Comptes Rendus*, 2d March, 1840. *Ibid.*

Treatment of Diseases of the Testicle by Compression.—Langston Parker, Esq., extols this practice as possessing great advantages over the ordinary methods. "In common swelled testicle compression may be employed," he says, "as soon as the patient is able to bear the application of the plasters; and this is generally much sooner than might be supposed, however acute the disease may be. The great advantages possessed by compression are, almost immediate relief to pain; which is occasioned, in great measure, by the dragging and weight of the inflamed organ, and is mitigated, and

most commonly completely removed by its support: the patient can pursue, in most instances, his ordinary duties, and there is no occasion to confine him to bed; a circumstance of great importance where concealment is wished, as it always is, in diseases of this kind. In addition the cure is much more quickly, and much more perfectly affected by compression than under the ordinary method, the swelling of the gland more rapidly subsiding, and less commonly leaving behind it any chronic irritation and enlargement, which is liable at some future time, in bad constitutions, from injury, or from a renewal of the disease, to degenerate into some of the malignant forms of disease of the testis.

"Chronic inflammation and enlargement of the testis also very commonly occurs as one of the symptoms of constitutional syphilis, as well as from other causes. Here, also, compression, as a local remedy, is by far the most valuable of any with which I am acquainted, particularly in those cases where enlargement of the organ, from chronic inflammation, has taken place to a considerable extent, where the weight chiefly incommodes the patient, and little or no tenderness is experienced when the part is handled.

"I am not prepared to say how far compression may be of service in the incipient stages of certain forms of malignant disease of the testis, but believe much advantage may be derived from its employment, since, in addition to the benefit to be looked for from mere compression of the part, much good may be expected from the constant topical application of mercury, iodine, and other remedies, only to be well accomplished in this way.

"Compression of the testis is to be practised by surrounding the organ by straps of plaster, applied as closely and as tight as the patient can bear. The plasters I generally use are those of ammoniacum, with mercury, or iodine and belladonna. These are to be smoothly spread upon thick wash leather, and cut into thin straps; an assistant then grasps the testicle, and draws it as far downwards as he can in the scrotum, which should previously be washed with a little spirits of wine. The first strap should be placed at the upper part, circularly round the testis, and succeeded by others, placed in the same direction, till the whole is covered. A second series of straps is then to be placed in an opposite direction to the former, crossing them at right angles, from behind forwards. One or two long ones may then be placed over these, where they appear to be most needed, to keep the whole in place. The parts should be supported by a well-fitting sus-

pensory bandage, although the plasters at once relieve any inconvenience or pain that may have been occasioned by the dragging or weight of the testicle."—*Lancet*, July 25, 1840. —*Ibid.*

Case of Phlebitis successfully treated. By George Bell, M. D., &c.—Phlebitis is a disease over which local remedies have little control, and one whose general management does not appear to be accurately understood. Cases of successful treatment, therefore, are alike interesting and important, for it is from their multiplication alone, that correct principles can be deduced. In order to assist in the fulfilment of this object, we record the following history:

Richard Millar, aged 22, of spare habit, sallow complexion, and habitually temperate, was admitted into St. Bartholomew's Hospital on the 8th of June, 1836, laboring under œdematous erysipelas, of the forearm, and simple integumental inflammation of the upper arm on the right side. His expression was anxious; the skin was hot and dry; the pulse frequent and full; the bowels were constipated; and the other symptoms which usually attend fever were observed.

He stated that, about ten days previous to his admission, he had been bled on account of a pain in his side, that on the following day he felt well, and returned to his work. The integument surrounding the wound made by the lancet became slightly inflamed and painful; but he continued at labor, heedless of the increasing pain and inflammation, until inclination and ability to be active had so diminished that he was obliged to confine himself to the house. His symptoms gradually increased in severity, until the evening of the ninth day, when he presented himself at the hospital in the condition already described. He had not been subjected to any treatment.

Twenty-four leeches were applied to the upper arm; the limb was directed to be fomented; and a cathartic of calomel and the compound extract of colocynth was administered.

On the following day the arm was less painful, but there was no abatement in the swelling, althoug the parts were less tense, and no improvement in the general symptoms. He now, for the first time, complained of pain shooting from the site of the wound towards the axilla; his intelligence was less acute, and his tongue was beginning to be incrusted at

the the edges. The basilic vein could be felt indurated nearly throughout its whole extent.

On the 20th, he was in the same state; the wound and the parts in the immediate vicinity were puffy, and obscure fluctuation could be felt. A small incision was made in the tumour, and about one drachm of purulent matter was evacuated. On introducing the probe, it was found that the instrument could pass in two directions only, viz. upwards and downwards, in the direction of the course of the vein, which led to the opinion that the matter had been evacuated from a venous abcess. This opinion was strengthened by the fact, that on gently pressing the vein from above dowards, an additional quantity of tinged purulent matter to the extent of two drachms escaped; and the vein, which previovsly felt hard and tense, had now become comparatively soft and pliant.

His pulse was still rapid, but compressible, and his bowels were inactive; the tongue foul; thirst moderate; and the skin dry but not parched.

A purgative enema was directed to be immediately administered; he was ordered to take every eighth hour a pill, consisting of two grains and a half of chalk and mercury powder, and the same amount of Dover's powder, and to use the effervescing draught according to the symptoms.

21st. The constitutional symptoms were improved; the swelling and pain of the arm were abated; but he complained of pain below the short ribs on the left side, and acute pain in the left knee-joint. The pain of the side was relieved by pressure, but that of the knee was much aggravated by the slightest touch. The knee was fomented. In a few days the mouth was slightly affected by the mercury; the limb regained its normal condition, and the patient as regards general symptoms, was convalescent. The vein was contracted to the size of a violin string. The alterative was omitted so soon as the mouth became affected, and some bitter infusion was prescribed.

On the 28th, he was quite convalescent, and discharged, with a recommendation to go to the country.

This case excited a good deal of interest at the time of its occurrence, and it is an important one in several respects. On the evening of admission it differed in no way from the common case of erysipelas with œdema, for he complained of nothing that could lead us to consider this lesion as secondary, either in importance or event. Our inquiries were

directed towards the discovery of *phlebitis*, for considering the wound made by the lancet as the centre, starting point, or the immediate cause of the erysipelas, we thought that it might give rise likewise to inflammation of the vein. This suspicion was not confirmed by aught seen or felt, for the redness and swelling of the upper arm effectually prevented any precise information being acquired by local examination. On the day succeeding that of his admission, matters were somewhat changed; there was pain distinctly referred to the course of the vein, the tenseness of the arm was diminished, and the indurated vein could be felt. Added to this, a tendency to typhoid fever was manifest. A question arose as to the propriety of continuing the antiphlogistic treatment. All the benefit to be expected from depletion or other depressing means had been already conferred, and we doubted the power of such measures, either to arrest or modify the progress of the local disease. Existing signs warranted this opinion, for the violence of the disease was abated, and the force of the constitution was declining; and the event of the following day confirmed it, for purulent matter had been already secreted, and was approaching the súrface. We had to do, therefore, with the constitution; we had to deal with the fever which had been awakened.

There is a peculiarity in the fever which attends this and some other local inflammations which cannot be accounted for, either on the tissue affected, or by the intensity of the inflammation. It differs from the fever which accompanies pneumonia, pleurisy, and other simple acute inflammations, which is purely symptomatic, and it is identical with that described by the late M. Broussais, as symptomatic of *gastro enteritis*, or inflammation of the glandular and follicular tissue of the bowels. It has the character of what, in this country, is denominated continued fever; it is little tolerant of depletive measures, and but slightly affected by treatment of the local affection. It is essentially an idiopathic fever, excited by a particular cause, of which cause it immediately becomes independent. We hazard no theory regarding the primary cause of fever, but, having referred to the doctrine of Broussais, shall merely express a doubt whether the fever he recognizes as symptomac of intestinal inflammation, is not rather dependent on disease having existed, by which the general irritability of the system has been so far modified as to render it obnoxious to common causes. In a word, we think that the fever is purely iodiopathic in its nature; that it occurs, not because the gastro-intestinal mucous membrane

is depraved, but because it has been depraved; and that the erysipelas, phlebitis, &c. are merely exciting causes, acting on a system predisposed to fever, and waiting an opportunity to exhibit its predisposition.

Having hinted at what we consider to be the nature and origin of fever, it may be expected that something should be said about the nature of the causes of which it is so commonly regarded as symptomatic. A man receives a wound, lacerated, contused, or simple; erysipelas occurs, a degree of fever accompanies it; he is bled, and phlebitis ensues. Little benefit is derived from the depletion, the fever speedily loses any signs of vigor it may have at first exhibited; and it assumes a typhoid type altogether identical with continued fever. This is a case which we have repeatedly witnessed. Here the man was predisposed to erysipelas; an acquired condition of the economy rendered him obnoxious to causes which, to the healthy, are sources of inconvenience rather than of danger. Anterior derangement was proved, by the changed irritability of the part in which the local disease appeared, and the constitution responded by a fever disproportioned in intensity to the exciting cause. Erysipelas is a local disease, recognizing a constitutional origin, and the fever excited by it is idiopathic in essence, originates from the same cause, and is born to immediate independence.

Reversing the order of events, local inflammation frequently arises during the progress of continued fever, and although the fever is its exciting cause, it is primarily dependent on the same anterior vicious working in the system which gave origin to the fever. The occurrence of inflammation in one tissue or organ rather than in another, can only be explained by the doctrine of peculiar susceptibilities. Inflammations occurring in this way are denominated spontaneous, by which term we understand that they arise independently of any influences external to the animal body. If this definition be correct, it implies some anterior change in the diseased capillaries, else when the same stimulus is circulating through the system, why does not general instead of local inflammation arise? It may or may not be true, that fever is another name for general inflammation; but the question still returns, why in addition have we another and a distinct inflammation? One year a large proportion of the inhabitants of this town were affected with bilious diarrhœa; another year few escaped the depression of influenza; during a third year many above the average suffered the pains of rheumatism; and every year hundreds are seized with continued fever, to

which is superadded a local inflammation, termed a complication, and occurring like an epidemic. Some peculiarity in the causes of the epidemic seems to determine the nature of the complication. The constitution has previously been so modified as to render one organ rather than another susceptible of generally acting causes. What may be affected through such a diluted imperceptible agent as these may be produced by the stronger and more sensible operation of unnatural, vicious, or civilized regimen, moral as well as physical. This seems to be the remote cause at once of the local disease and the fever it awakens, and as both are constitutional in origin, our remedies should be chiefly applied through the medium of the constitution. Experience shows that topical remedies have little effect on the local evidences of constitutional ailment, and still less on the fever which the local disease kindles.

Erysipelas may be the exciting cause of phlebitis. A middle-aged man, of dissipated habits, received a wound on the hand; erysipelas ensued, which gradually extended up the arm to the body, so as to involve the shoulder and side of the chest. He died. On dissection it was found that the subcutaneous cellular tissue of the upper arm was affected, the limb was œdematous, the texture immediately surrounding the vein was infiltrated with purulent matter, the coats of the vein were thickened, the *vasa vasorum* were distinct, and the canal of the vessel was filled with purulent matter. We have reason to believe likewise that phlebitis is sometimes the result of burns. We have more than once made minute examination of the veins of subjects brought to the dissecting-room with marks of recent injury from fire. In these cases it was found that the plexus of veins at the bend of the arm, together with the main trunks, were effected in the manner above described. In addition to this there are other reasons for believing that burns sometimes prove fatal by inducing phlebitis. We have observed that burns by which the vitality of the skin is immediately destroyed, are, *cæteris paribus*, less fatal than those which excite such a degree of inflammation, as despite treatment, to advance to mortification or sloughing of that texture. The general symptoms in such cases are similar to those observed in phlebitis; the fever is seldom of a character which demands decided antiphlogistic measures, but, on the contrary, is of such a nature as to require our being on the watch for the time when stimuli are necessary.

We have seen several cases in which the injury was con-

fined to the upper part of the arm, and in which a fever, speedily assuming a typhoid type, set in, and carried off the patient. In comparing such cases with others, in which the vitality of the skin was destroyed by fire, and the patients recovered, we are inclined to believe that the constitutional symptoms were not, in the first class of cases, dependent solely on the integumental inflammation, but that some other local inflammation had arisen which determined the fatal event. The extent of the injury in the case referred to, would not account for so serious a result. One fact, mentioned in the history of Millar's case, enables us to ask whether the practice of re-opening the wound in the vein, with the view to discover and evacuate purulent matter, might not with advantage become more general. We cannot see that it involves risk; and it is reasonable to expect that it might frequently be productive of positive good.

With regard to the treatment of *phlebitis* in general, the practice pursued in the case of Millar seems to be worthy of imitation. It was adopted in his case, because we had frequently seen it successful in cases of erysipelas in which the constitution was similarly disturbed. Local depletion cautiously employed, alteratives, gentle laxatives, and enemata, succeeded by nutrients and a moderate use of stimulants, are the means best calculated to relieve the constitutional suffering, and conduct our patient safely through his convalescence. We say that local depletion should be cautiously employed, because danger may, and often does arise from acting on the imagination, that if it does no good it will do no harm, and we approve of alteratives, because we believe that the severity of the symptoms chiefly depends on a morbid condition of the intestinal and hepatic secretions, which can be most certainly remedied through their influence. We say this, not only because we have seen their beneficial effects in this case, but because we have witnessed their salutary operation in many cases of continued fever, evidently dependent on intestinal derangement; because we have observed their beneficial effects in cases of foul ulcers, and ill-conditioned wounds in which the general symptoms were similar to, though not so intense as those which accompany *phlebitis;* and because we have found them to be valuable agents in many cases where long continued bad health was clearly referable to a depraved condition of the gastro-intestinal mucous membrane, as indicated by the tongue, skin, eye, temper, and the mental and corporal activity of the person. This would be a fitting place to enlarge on sympathy with a view

to explain all this. We might talk at length and much more mysteriously about the sympathy which exists between the stomach and other parts of the system. We might quote the numerous propositions of authors, criticise their logic, and express wonder at their powers of supposition. We might consider their data, modify their reasoning, and draw new, perhaps opposite conclusions; but in so doing we should be aiding and abetting in mystifying what has been already sufficiently obscured. Thus, although a fresh hypothesis might be invented, the words explanatory thereof traced, still no one would be benefitted thereby; for it is absurd to speculate on conceptions of whose genuineness we have no certain test. Too much caution cannot be observed in the application of the inductive method of reasoning to the solution of questions connected with a purely practical science.

In the cases alluded to, we dread the active employment of cathartics, unless the bowels are distended with feculent matter, and a necessity evidently exists for their immediate evacuation. In such instances we should employ purgatives with a view merely to unload the bowels, and not with that perseverance which implies a belief in their power to remedy the lesion which determined the lodgement. We here desire that our opinion be not regarded as opposed to the doctrine so ably propounded by the late Dr. Hamilton, whose name is so closely and justly associated with the principle of employing laxatives without purging. Dr. Hamilton refers to cases in which it is evident that the symptoms are owing to abdominal irritation produced by the accumulation of feculent matter; and not to cases where they are dependent on a depraved state of the gastro-intestinal mucous membrane, of which the lodgement of fæces is not the most serious effect, or that to which the physician should primarily and principally direct his attention. We employ purgatives in such cases merely to unload the intestines, to remove accumulated secretions, and not with any intention to remedy the lesion which exists, which is more certainly rectified by the judicious employment of mercurial alteratives.

We have frequently observed the co-existence of erysipelas, phlebitis, and other local morbid states, with abdominal derangement; the latter having been known to exist prior to the former, or the fever which accompanies them, and, therefore, independent of both. The frequency of the coincidence awakens a belief in their connection; and the result of treatment directed towards remedying the abdominal lesion justifies the opinion, that that connection is relationship. We

have spoken of alteratives as a class of remedies on whose power to rectify the abdominal derangement we place considerable reliance; and we are the more encouraged to do so, because we have generally observed that slight affection of the gums, or fætor of the breath, and the commencement of a return towards health, are simultaneous events. Although not quite relevant to the subject, we may be allowed to remark, that, in the treatment of delirium tremens by calomel and opium, abatement of the symptoms has almost uniformly been coincident with the characteristic effects of the mercurial. This has been so much the case, that, to us, it appears a good fact on which to ground our prognosis, however slight the change may be. It is an evidence that the constitution is still susceptible of the influence of remedies.

Derangement of the biliary organ is frequently associated with the lesion of the stomach and bowels referred to. Whether it be affected primarily or secondarily, the result is the same: for once established, the two diseases react on each other, and the discord is kept up. Each lesion becomes a strong reason for the persistence of the other, and our object is to remove one, for thereby we shall more readily silence the other. We do not pretend to know the cause of the primary lesion, for it may or may not depend on the causes to which it is commonly attributed; but of this we are assured, that the diseases may go on, though the primary cause has long ceased to operate, for two lesions exist; they are springs, and the pendulum which vibrates between them, striking alternately agrinst each, is sent back with almost undiminished force. But vital strength will yield to continued calls for its exertion; by degrees this energy will diminish; by degrees his reciprocal action will fade; in time it will entirely cease, and the patient be a miserable dyspeptic. The two lesions are now quite independent of each other, and for their removal a doubtful and experimental and complicated treatment is required.—*Edin. Med. and Surg. Jour.*—*Medical Examiner of* December 16, 1840.

THE WESTERN JOURNAL.

Vol. III.—No. II.

LOUISVILLE, FEBRUARY 1, 1841.

MEDICAL CONVENTION OF KENTUCKY.

We have twice referred to a proposed Convention of the physicians of Kentucky, called by the Medical Association of North East Kentucky, to be held at Frankfort, on the first Monday of January. It was held; and we write this notice on board the steam boat, returning from it.

About sixty physicians attended, and their deliberations were characterized by harmony, and a zealous prosecution of the object for which they assembled. That object was the formation of a State Medical Society. To this end a Constitution was reported by the Committee raised for that purpose, and after careful examination adopted, we believe, unanimously. A system of rules and principles of professional intercourse was made out, and prefixed to it; and the corresponding secretary was ordered to transmit a copy of both to the seat of justice of every county of the State, directed to the physicians of the county.

The adoption of these, and the formation of district associations, will make them members of the State Medical Society. Thus the representative principle has not been admitted into this organization. We congratulate the profession of our state on this exclusion, convinced that the meetings of a state society composed of *Delegates* can never be as profitable, as meetings which embrace a large number of the profession. We hope and trust that our brethren throughout the State may so far

approve of what will be sent to them, as to co-operate in the formation of the proposed society; and afterwards attend it numerously.

During the sitting of the Convention a committee appointed for that purpose, reported several resolutions on the subject of medical education, and the preparatory acquirements of students, which were unanimously adopted.

Since the above was written we have received a printed copy of the Constitution adopted by the Convention, with a resolution for carrying it into effect which, as interesting to our readers in Kentucky, and, perhaps, in other parts of the West, we here extract:

"This Society shall be known by the name of the *State Medical Society of Kentucky*, and shall convene, annually, on the Wednesday succeeding the second Monday of January, in the town of Frankfort. The President shall call the Society to order at 10 A. M., and the meetings shall continue from day to day, till the business of the Society be concluded.

"*Exercises of the Society.*

"The exercises of the Society shall consist of papers, or addresses, on some subject connected with the science of medicine. A paper shall be required from at least six of the District Societies, which shall be selected by the President. Reports shall be requested from the District Societies generally, upon the diseases, medical topography, statistics, climate, botany, geology, and any peculiarities of their particular region—communications on points of especial interest and importance shall be requested from the aged and learned of the profession throughout the State.

"All Committees shall be appointed by the President, unless the business be of a very extraordinary nature, when the Committee may be selected by ballot.

"When, in the opinion of the President, it shall be considered of sufficient importance to the interests of the Society, he shall have power to appoint a called meeting, and shall require the Corresponding Secretary to advise the Presidents of all District Societies of the fact, at least one month previous to the appointed time.

"Twenty members shall constitute a quorum to do business.

"In all cases of difficulty in the District Societies, appeal may be had to the State Society, whose decision shall be final.

"No rule or regulation of this Society shall be altered, amended or repealed, nor additional regulations adopted at any meeting, but by a vote of three-fourths of the members present.

"No Society now in existence, or which may hereafter be formed, shall be permitted to hold connection with this, which shall not adopt the foregoing system for their government.

"No District Society shall adopt any rule conflicting with the above.

"All who hold membership in the District Societies shall be considered members of the State Society.

"*Resolved*, That the Corresponding Secretary of this Convention, address to the physicians of each county in the State, (directed to the county seats) a copy of the Constitution and by-laws formed by this Convention, accompanied with this resolution, and urge them to organize themselves *immediately*, into District Societies; the limits of which, shall be prescribed by themselves. And that, as early as practicable, they send to him a copy of their Constitution and by-laws, signed by the officers, together with a list of their members—and if their organization be in accordance with the Constitution aforesaid, he shall thereupon enrol their names as members." D.

BILIOUS AND CONGESTIVE FEVER. BY A. M. KELLER, M. D., OF ALABAMA.

We lay before our readers the following extract of a letter from a scientific physician of the South. Y.

In the treatment of a strictly bilious fever, purgatives are our great reliance; and we need not ransack the materia medica for a variety. Calomel, uncombined, is the mildest and most effectual—to be repeated as long as bilious evacuations appear. In long continued cases, particularly where there is no sensible remission, where calomel has been freely given, I have been in the habit of combining quinine and calomel together—3 grs. quinine, 4 of calomel—given every two hours. I look upon quinine as the most powerful sudorific in the whole catalogue of medicines. In large doses it acts as a sedative; for in numerous instances, I have seen the pulse reduced to a natural state in a few hours by its use. J. H. had been sick twelve or fourteen days with bilious fever, during the last eight of which, no sensible remission had taken place. He had been freely operated upon by mercurial purgatives, given both in full and broken doses, without any abatement of his fever; when, becoming alarmed for his safety, I commenced the above combination of calomel and quinine. When the first dose was given, his pulse was about 100 per minute; by the time he had taken the third dose it was at 75, the natural standard with him, and the whole surface was bathed in profuse perspiration, so much so, that it became unpleasant to the patient, and he strongly insisted on the windows being opened, on fanning, &c. By the time he had taken some thirty grains of the quinine, I thought it prudent to wait for the operation of the bowels, which soon took place effectually, and he had no more fever. The quinine was continued alone for several days. I look upon it as the only febrifuge we possess, strictly so called.

Congestive Fever.—Much has been said and written about this truly formidable disease. It is so insidious in its attack, and puts on, when it does approach, so exactly the form of chills and fever, that one who has

never seen it would treat it as such; and would not, in all probability, discover his mistake until the disease had gone beyond his reach. It may be known by the greater severity and permanency of the chill, and a death-like coldness and lividity of the whole surface; great derangement of the sensorial functions, almost from the commencement. The tongue exhibits a most peculiar appearance—generally very little coated but very moist, and of a *purplish colour*; this last I consider almost a certain diagnostic of the disease. It generally, if fatal, terminates with the third chill; this generally happens about the fourth day. Sometimes I have known it to be constituted of a rapid succession of chills, destroying the patient in forty-eight hours. When called to the patient you must use no half-way remedies. Give calomel in large doses every two hours, until it operates on the bowels; if the discharges are not dark, pitchy, and consistent, check them at once by an opiate injection and re-commence the calomel in increased doses, and never stop until the discharges are right. To relieve the intense suffering of the patient from cold, give him hot and strong French brandy toddy ad libitum. If, notwithstanding your efforts, collapse supervenes, put your patient into a strong mustard bath; if that fails to excite the pulse, there is a last remedy you may resort to—what in medicine may truly be called a hydrostatic paradox. Strip your patient entirely, and dash about fifty gallons of cold water over him as hard and fast as you can; wipe hastily with warm towels and wrap him in hot blankets, and use any other exciting measures, as friction to the feet and hands. Make a black liniment as follows:

Olive oil ℥iss.
Spts. turpentine ℥iss.
Sulph. acid ℥iii.

Mix in an open vessel—to be rubbed on warm.

If the pulse revives, keep it up if you can with brandy; if it sinks again or does not rise from the first cold dash, try it again; and as long as your patient has life, for if this does not save him nothing will. I have seen it tried often, and in two-thirds of the cases it proved entirely successful. One case, I recollect, of a favorite servant; the family had despaired of her life, and had removed her to an adjoining room to die. She was entirely pulseless, and had been so for hours; the cold dash was applied twice in an hour, and in three hours the excitement was so great as to require the free use of the lancet; in a few days she was as well as ever. If cold water fails to excite in this last stage, you may consider the case of your patient hopeless.

January, 1841.

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OF

MEDICINE AND SURGERY.

MARCH, 1841.

ART. I.—*A Memoir on the Diseases called by the people "Trembles," and the "Sick-Stomach" or "Milk-Sickness;" as they have occurred in the counties of Fayette, Madison, Clark, and Green in the State of Ohio.* Read before the Medical Convention of Kentucky, at Frankfort, January 12th, 1841. By DANIEL DRAKE, M. D., of the Medical Institute of Louisville.

INTRODUCTION.

IT is generally known, that on the western side of the Alleghany mountains, from Georgia to the Lakes, a disorder, called *Trembles*, has for a long time prevailed among cattle

and other domestic animals; and that wherever it has appeared, the people have been liable to a disease, which from its prominent symptom has received the name of *Sick-Stomach*, and from a hypothesis concerning its cause that of *Milk-Sickness.* These maladies, which may be regarded as endemics of the central portions of the Mississippi Valley, have not shown themselves equally in all parts of it—as large districts are known to be entirely exempt.

As far as we know, the first notice of these affections was published in Cincinnati in the year 1809,* and consisted in part, of the observations of Dr. Thomas Barbee, a highly intelligent and respectable physician of Bourbon county, in this state, long since deceased; who on a visit to the upper settlements on the Great Miami River in the state of Ohio. first became acquainted with it. Since that time, our medical and other journals have presented a great number of papers on the same subject, but notwithstanding the ability with which several of them have been drawn up, much obscurity and doubt still envelope it. The state of Kentucky, as liberal in her efforts to relieve the afflicted, as she has always proved herself gallant in the field, several years since offered a reward for the discovery of the remote cause or causes of these disorders, but no one has yet appeared successfully to claim the premium.

It cannot be doubted, that if *all* the infested places could be examined and compared, so as to ascertain the circumstances of soil, water and vegetable productions, in which they, at once, coincided with each other, and differed from the remainder of the country, the cause would be revealed. Such a comprehensive and minute survey, could best be made

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* See Notices concerning Cincinnati.

by a single well qualified individual, who might for the requisite length of time, devote himself exclusively to it; but such an enterprise is not likely to be executed, and we shall, in all probability, have to wait for particular histories carefully drawn up and brought together for comparison. It was in the hope of making to the common stock, a contribution of this kind, that in the month of September last, we were induced to select for examination, a small district in the state of Ohio, which has long had the reputation of being greatly affected with these maladies. The time spent in it was from the 1st to the 15th of that month, during which we travelled on horseback and on foot, more than one hundred and fifty miles. We visited almost every important locality, conversed with a great number of physicians, who communicated their experience and observations with the utmost liberality; and made inquiry of a far greater number of respectable and intelligent farmers, living in situations favorable to this kind of investigation. In all cases, we sought by a rigid scrutiny to arrive at the truth, and often examined many different witnesses for the same fact. The answers were generally written down at the moment, or at the earliest practicable period afterwards; as were likewise all the observations made on the geology and botany of the region which we explored. No case of the disease, however, either in man or brute was met with. Information thus collected, although less authentic, and perhaps less accurate than that derived from personal observation, would seem to be not unworthy of the profession, and we have therefore embodied it in the following Memoir. We have in no instance incorporated with it published facts concerning these diseases, as they present themselves elsewhere, intending to give a monograph of them, as they show themselves, in the tract selected

for examination. This we hope has been faithfully done, and with these preliminary remarks we shall proceed to lay them before the Convention.

TOPOGRAPHY.

That part of the state of Ohio which is known as the Virginia Military District, is bounded south by the Ohio River, east by the Scioto, west by the Little Miami and north by the head waters of the Scioto, which lie so far to the west, as to be nearly in the same meridian with those of the Little Miami, which is the shorter river of the two. As they flow towards the south these small rivers diverge from each other, so as to enter the Ohio, nearly twice as far a part as they are at a middle point on the Scioto, in the latitude of 39 deg. and 45 min.—the mean latitude of the region to which our Memoir relates. The elevation of that region is about five hundred feet above the surface of Lake Erie, and something more than one thousand feet above the level of the ocean.

The southern tier of counties of the District are, to begin immediately below the mouth of the Scioto, Adams, Brown and Clermont, lying opposite to Lewis, Mason, Bracken, and Campbell counties in Kentucky. North of this tier lie a part of Pike and Ross, and the whole of Highland and Clinton. Then comes the entire county of Fayette, flanked with parts of Pickaway on the east, and Warren on the west. Immediately north of Fayette is Madison, with a portion of Franklin on the side next the Scioto, and of Green and Clark on that next the Miami. North of Madison lies Union. In the southern counties, the diseases under consideration occasionally show themselves in a few localities, but do not occur with fre-

quency, till we enter the southern edge of Fayette, nearly in the latitude of Chillicothe; thence to the northern boundary of the District they are endemic, and, according to the reports of the people, have been of such frequent and fatal occurrence, as to render them subjects of deep public interest. Our exploration was limited to that part of the region which lies south of the national road, composed of the whole of Fayette, and parts of Madison, Clark, Green, Franklin, Pickaway and Ross. The surface of this portion of the District is so flat and level as to constitute it a table land. The streams which flow from it towards the Scioto, the Little Miami and Mad River, have channels so little inclined, that when low, the water almost stagnates, while from the same cause when, high they overflow their banks. After lagging for a time in these nearly horizontal beds, they approach the deeply cut channels of the Scioto and Little Miami, when their currents acquire greater velocity, and before they reach their destination, several of them present rapids, some even cataracts. In proportion as this occurs, the diseases we are investigating diminish in frequency, so that in the actual vallies of the two principal rivers, they are seldom met with. In fact they may be said to be limited to the table land. Confining our attention at present to it, we may note several varieties of surface. 1st. Prairies, which are the beds of shallow lakes or ponds, which have been gradually filled up, and the greater part or the whole of the water evaporated. 2d. A kind of maple swamps, or wet wood lands adjoining to the prairies, and nearly or quite on the same level with them. 3d. Barrens, also contiguous to the prairies, but generally a little elevated above them, with a poorer and dryer soil, presenting the remains of an oak forest, which had been thinned out by fire from the prairies. 4th. Heavily timbered

oak lands, nearly on the same level with the last. 5th. Scattered through these oak lands, small wet places and shallow ponds, called by the people "slashes."* Of that kind of rolling, dry and fertile surface, which is presented by the central and north-eastern counties of Kentucky there is none.

GEOLOGY.

That part of the Virginia Military District, which lies in the angle formed by the junction of the Scioto and Ohio rivers, presents the outcroppings of thick strata of conglomerate, topping the highest hills, and resting upon a fine grained sand stone; which itself reposes on a bed of soft, grey, friable argillaceous shale, which graduates into a bituminous slate. Immediately underneath this, appearing to the northwest of all the rest, is a compact, drab-greyish limestone, which stretches across the middle and northern part of the District. Over this formation, is every where spread a deep bed of diluvial or transported materials, consisting of blue and yellow clay, gravel and sand. Throughout the whole tract thus covered, there are but few springs; and of course the reliance of the people is upon wells, which vary in depth from five to forty feet. The water which they afford, though in general sufficiently transparent, is impregnated with the saline substances generally present in well water, rendering it hard: and it has, moreover, very often a sulphureous taste. In summer and autumn, when many of the smaller streams are dried up, the cattle and other domestic animals, which are kept in enclosed pastures, are watered from these wells,

* This is probably a corruption of slush, itself, a corruption of sludge. Being in universal use in the District, we shall adopt it into this Memoir.

while those which run at large drink the water of ponds and sluggish creeks.

BOTANY.

1. The densely wooded TABLE-LANDS present, in great abundance, several species of oak—(white, black, and red in the language of the people)—such as *quercus alba*, *tinctoria*, *falcata* and others. Intermingled with these are two or three hickories (*carya;*) the tulip or yellow poplar tree (*lir: tulipifera;*) dog-wood (*cornus florida;*) black ash (*fraxinus sambucifolia;*) sassafras and spicewood (*laurus;*) plums and cherries (*prunus;*) hazle (*corylus;*) black-haw (*viburnum;*) and other trees, shrubs and vines, which in all parts of the West are found in natural association with these.

As far as we had time and skill to examine the herbaceous flora of these tables, as it presented itself in autumn, we found it in harmony with the arborescent. Not a single plant fell under our notice, which we had not been accustomed to see in the corresponding oak lands of Ohio and Kentucky; an observation that conforms entirely, with the more accurate and careful inquiries of Dr. Riddell, Dr. Warder, and Mr. Sullivant; the last of whom expressly declares, that he has not been able to find, on those plateaus, one species of plant which is peculiar to them.

2. The SLASHES, or small wet places, interspersed through the plateaus, present a striking modification of the surrounding flora; as most of the plants found on the latter, are replaced by those which delight in a deep, black, wet soil. The characteristic trees are the white elm (*ulmus Americana;*) black walnut (*juglans nigra;*) burr oak (*q. macrocarpa;*) honey locust (*gleditsia triacanthos;*) water maple (*acer rubrum;*) and

black ash (*fraxinus.*) Of the climbing vines, the principal are several species of *smilax;* the *celastrus scandens*, an *occasional* grape (*vitis;*) ivy (*ampelopsis quinquefolia;*) creeper (*bignonia capreolata;*) above all, the poison vine (*rhus radicans et toxicodendron,*) which although common enough in the adjoining oak lands, is far more frequent and luxuriant, in and around the SLASHES, than we have ever seen it elsewhere. It *seems* to select the white elm, and like a parasite clings to almost every individual of that species. Of the shrubs found in these spots, we may mention the spice-wood (*laurus,*) in a few, the poison or swamp dog-wood (*rhus venenata, olim vernix,*) and the button head (*cephalanthus occidentalis.*)

The herbaceous botany of these little localities, differs from that of the surrounding, drier table-lands chiefly in this, that while species which flourish best in a wet rich soil, show comparatively but a few individuals, on the general surface of the plateaus, they here present a great number—those which are natural to thin and dry surfaces disappearing. Thus, for example, the *lobelias—syphilica and cardinalis*, are in these places extremely common, but the *inflata* rare; the *ranunculi* become abundant; and the *eupatorium ageratoides*, which grows in profusion over the adjoining oak lands, is replaced by the *e. perfoliatum.* Of herbaceous plants *peculiar* to these spots we did not find a single species.

3. The BARRENS present much less timber and fewer species of every kind, as they have been destroyed by fire. Oak and hickory are the predominant forest trees, and hazle bushes the chief shrubbery. The *rhus* and the other climbing vines, with the exception of the *celastrus scandens*, are rare. Different grasses have taken the places of many other herbaceous plants, the latter having been destroyed by ancient conflagrations. In short, we have here the surviving vegeta-

tions of the plateaus; but we need not dwell on the botany of these tracts, as they are known *not* to give rise to the diseases we are investigating.

4 and 5. The prairies and adjoining flats, are universally believed to be equally exempt from the cause of those maladies and we shall not, therefore, dwell on their botany.

With this sketch of the topography, geology and botany of the district to which we have invited attention, let us proceed to speak of the diseases which are the immediate subjects of our inquiry; in doing which, not a single fact not observed by ourselves or others, *within the District*, will be introduced. We shall begin with the epizootic malady, known only by the name of

THE TREMBLES.

The following animals are enumerated as subject to this malady: 1, the cow; 2, the horse; 3, the sheep; 4, the hog; 5, the dog; to which may be added as doubtful, 6, the goat; 7, the mule; 8, the buzzard. Each of these names is used for a species, and not restricted, either to sex, or any group of individuals. The characteristic symptoms are so much alike in all, that an account of them in one of the species will serve, with a few variations and additions, for the whole. When they are stated, the members of the Convention will judge for themselves, whether, in its symptomatology, this affection presents any thing peculiar. We select the first, as the most liable to the disease, or at least in which it has been oftenest and best observed.

The Cow.

In the earliest stages of this malady, in the cow, it may not display its existence, if the attack be not violent and the animal left to itself; for in the beginning, as in all stages of the disorder, the appetite seems to be unimpaired, and the thirst not increased. Even this early stage not less than the more advanced, appears, however, to be attended with constipation of the bowels. The animal at length begins to mope and droop, to walk slower than its fellows, and to falter in its gait. If under these circumstances, it should be driven, and attempt to run, the debility and stiffness of its muscles are immediately apparent. It fails rapidly, trembles, pants, and sometimes seems blind, as it runs against obstacles, but this may arise from vertigo; at length it falls down, lies on its side quivering, and is not, perhaps, able to rise for several hours, sometimes never. Now and then, the quivering amounts to a slight convulsion. When the disease is not violent, the animal after a longer or shorter period, is again on its feet; but its capacity for muscular effort is greatly impaired, and, if hurried in the slightest degree, it is siezed with trembling and stiffness, and may even fall again. Of the state of the circulation, when it lies seriously ill, but little is known, as the pulse has not been inspected. One observer perceived that the nose of a heifer was hot, but others have found that part and the skin generally cool. Perhaps their observations were made in different stages of the disease. While lying unable to walk, the animal will still eat freely, and also take drink, but does not seem to have excessive thirst. Its costiveness continues to the last when the malady goes on to a fatal termination. Of the symptoms which pre-

cede dissolution, we could not obtain a satisfactory account. Our witnesses generally declared, however, that the abdomen does not swell in any stage of the disease. When it assumes a chronic form, the animal is liable, for weeks and even months, to muscular infirmity under exercise, looks gaunt and thin, its hair assumes a dead appearance, and sometimes falls off in considerable quantities, especially from the neck.

Males and females are said to be equally liable, except such of the latter as give milk. To their exemption, every individual whom we interrogated bore testimony. Sucking calves are exceedingly liable to the malady. If driven rapidly, they fall and tremble; but the paroxysm generally comes on when they are at the teat. They suck for a minute or more, then stagger off and fall, struggle, are sometimes slightly convulsed, and a quantity of milk is regurgitated from the pharynx or stomach. After reposing for a short time, they rise and resume the teat, but perhaps fall again. The people ascribe these paroxysms to the impress of the milk upon the stomach of the little animal; but a more probable explanation is, that they are excited by the muscular efforts made in sucking, after ten or twelve hours separation from the cow. Calves often die of this malady, and their dams are said, then, frequently to become affected with the disease. The milk has no peculiar odor, and is readily formed into butter and cheese.

The *pathological anatomy* of this disorder has not yet been *studied*. The medical gentlemen where it prevails have certainly been remiss on this point, as they have had many opportunities of making *post mortem* examinations. Dr. Toland, a respectable physician of London, in Madison county, has, however, inspected the abdominal viscera of

several cattle dead from this malady. The contents of the maniplies or third stomach were dry and hard, its mucous membrane was dry and seemed to adhere to the alimentary mass, with which it would come away, though it did not appear to be mortified. The mucous membrane of the small intestines was, in some places dry, in others greatly injected with blood; their contents were hardened; they were not distended with gas. The gall bladder was filled with black, pitchy bile. In some cases, the kidneys were nearly black, and appeared to be gangrenous. On opening the carcases (before putrefaction had commenced) an offensive odor was emitted not unlike that attendant on a mercurial salivation; an observation which was confirmed by that of Lewis Skilling, who lives near South Charleston, in Clark county. He lost twenty-one cattle about one time, and found, on skinning them, that every one emitted an offensive smell of a peculiar kind, before the cavities were opened. They made candles of some of the tallow, but in burning, its smell was so offensive, that they were obliged to throw them away. Daniel Horney, near Jeffersonville, Fayette county, has found the contents of the alimentary canal dry and hard. Mr. Keller, near Martinsburg, in the same county, made one examination and found the contents dry as saw dust. Jonathan Pierce, near South Charleston, opened some of his cattle dead from this disease, and found the contents of the maniplies dry; and those of about a foot of the bowels likewise, the mucous membrane of the latter being red.

The Horse.

The symptoms in the horse are substantially the same as in the cow. It often happens, that he is not known to be in the

forming stage, or even predisposed to the malady, when, on pushing him for a short distance under the saddle, or riding for half a day on a journey, or driving him in a team, he begins to sweat profusely, lags, trembles, breathes laboriously, and if urged on, falls down and lies trembling. In this situation, he sometimes suddenly dies, at other times revives, and if not required to travel home may recover. He is costive like the cow. The mare while nursing, is exempt, and her colt liable like the calf. It sometimes, while sucking, ejects the milk from its mouth and nostrils. Horses, in proportion to their number, and their being kept under the same circumstances as horned cattle, appear to be equally liable.

Sheep.

These animals so often die, in the District, of other diseases, that some confusion exists in the reports on their symptoms. Comparing all that were made to us, we are prepared to say, that the symptoms displayed by them in the muscular system, and in the bowels, are the same as those already described. Lambs are subject to the disease, but their mothers generally escape till after they are weaned.

Hogs.

Hogs, considering their number, are less frequently affected than cattle, horses and sheep. They have the same muscular enervation with other animals, lose their flesh, become costive, and often utter low squeaks or grunts, indicative of distress. It has some times been observed, that the breath of pigs affected with the malady was altered and offensive; an

observation which only those who are accustomed to make house pets of these animals, could be qualified to make.

The Dog.

When this animal is attacked, he loses his watchfulness, and lies about utterly indisposed to action. When urged to move, he is found to be stiff, and after faltering and vacillating, falls or lies down. He eats, but loses flesh, and is costive. In this condition he may remain a while and recover; but if stimulated to a vigorous muscular effort, he sometimes suddenly expires. Judge Jameson, near Washington, Fayette county, had a dog laboring under a mild attack, who started after a deer, that was crossing the farm. He ran with considerable speed for about two hundred yards, when he suddenly stopped, uttered a yell and fell down, and soon afterwards expired. Henry Massie, Esq., knew of a case, in which a dog affected with the disease was drawn into a fight with another, and in the midst of it expired. William Janes, of Jeffersonville, in the same county, has several times seen dogs "drop down dead," when running after animals. Dogs are sometimes observed to vomit. Their temper is not irascible. We did not learn whether, the bitch which gives suck is exempt—the puppies are not.

The Goat.

We heard of but one case of the disease in this animal, which, however, is rare in the District and keeps about the houses and yards.

The Mule.

As but few mules are grown in the District, but little is known as to their liability. We could learn of but one death of this tribe. The symptoms were said to be the same that have been enumerated.

The Buzzard.

Three persons have seen buzzards, under circumstances which cannot be made intelligible in this part of our Memoir, that suggested to the observers, that these birds were affected with the disease. Their symptoms were muscular.

TREATMENT OF THE TREMBLES.

We met with no medical gentleman, who had subjected animals laboring under this disease to a systematic, or even varied empirical treatment. All the people of the District have one and the same indication to fulfil—that of opening the bowels. When this can be effected, the animal, they say, scarcely ever dies—when it cannot, death occurs. For the fulfilment of this indication, Epsom salt has been administered in very large quantities, even to pounds, but without effect. Drenches of lard and various mixtures, have also been given, with no satisfactory result. Judge Harold, near South Charleston, has exhibited calomel followed by lard—no essential benefit. Dr. Toland has administered the oil of turpentine, in doses of eight, twelve and sixteen ounces, without advantage. An opinion is prevalent, that drenching animals injures them by causing them to struggle. On the

whole, we found among the people of the District, a total want of confidence, in all kinds of cathartic *medicines;* and an exclusive reliance on INDIAN CORN. Some preferred old corn, some new, and others that which had been frost bitten. This is fed to all those species of animals that are accustomed to eat it, and is said never to be refused. The more the animal will eat, the greater is the hope of the owner. It is said to produce *purging*, when every other means have failed, and then, it is affirmed, recovery is almost certain. On these points we found but one opinion in the District. Several of its physicians, after trying other things, had, with the people, settled down on this.

We found BLOOD LETTING not in favor. Dr. Toland supposes it has, generally, been employed at too late a period. Many non-professional persons, spoke of having resorted to it without advantage, and some thought it had done harm.

Throughout the disease, rest is considered a *sine qua non*, to the favorable effect of any measure; and of itself, in mild cases, sufficient; that is, if they be not aggravated by exercise, the disease will wear itself out, or spontaneously subside.

OF THE SICK-STOMACH OR MILK-SICKNESS.

Of the popular opinion, that this malady has in its cause a connexion with the Trembles, we shall speak presently. It attacks men, women and children, in an equal degree; young children, however, are said to be less liable.

When the individual is about to be taken down, he feels weary, trembles more or less under exertion, and often experiences pain, numbness and slight cramps in the calves and other muscles of his legs. At the same time, he becomes costive; and, under fatigue, is likely to experience a slight degree

of nausea. His appetite is not generally impaired, but he has a feeling of depression and burning, at the pit of the stomach. He is irresolute, and as much indisposed to mental as to bodily effort. He may continue in this situation for a while and recover spontaneously, or by a single cathartic; but more commonly under the influence of an exciting cause, severe symptoms supervene. A full meal, or a great quantity of indigestible food is such an one; but another, far more common and efficient, is violent or protracted muscular exertion. This is, indeed, the only exciting cause, which all the people and physicians of the District, concur in admitting. The patient being subjected to this, full vomiting supervenes, with much epigastric distress. He throws up the contents of his stomach; and continuing, at short intervals, to vomit or retch, brings up small quantities of acid and mucus, but very seldom much bile. In attempting to sit up, his sickness increases, and his muscles generally become affected with a twitching and tumultuary motion. In lying he is restless, and tosses himself from side to side, in great anxiety. His thirst is generally unquenchable. In the midst of these symptoms, his bowels remain torpid, without pain, and do not swell, but seem rather reduced in volume, with a retraction of the umbilicus towards the spine; so that the pulsations of the aorta can be distinctly perceived. Dr. Thos. McGarraugh, now of Frankfort, Ross county, but for many years an observing practitioner, of Washington, Fayette county, states, that the tongue is sometimes natural, but at others pale and covered with a film of mucus, which is yellow in the middle; in the advanced stages of certain violent cases, it looks like a mass of raw flesh. The heart manifests a convulsive action, and the aorta pulsates with unwonted violence. Notwithstanding all this, the pulse is sometimes almost natural, and al-

though in certain cases increased in tension, is not apt to be very frequent. Now and then its diameter becomes very small. These are the remarks of Dr. Toland, which in the main, correspond with those of other observers. There is no cough; but the patient sighs, and his breath has a singular, offensive, somewhat mercurial odor; so distinct from that in autumnal fever or any other known disease, as to be regarded quite characteristic of this. The skin is generally cool, in the latter stages cold; Dr. McGarraugh has, however, in some cases observed increased heat on the thorax. The surface generally, is always dry.

Many cases are cured, when the symptoms here enumerated are present; but others go on to a fatal termination. In such, the irritability of the stomach is often so great, that the least motion in bed, or a moment's conversation, will bring on retching, or vomiting; when, in several instances, the patient has thrown up a dark colored matter, like that ejected in fatal cases of yellow fever;—death does not however, so constantly follow this discharge, as it does, the coffee ground evacuation, in that disease. The constipation continues, and the retraction of the umbilicus rather increases than diminishes. There is no peritoneal soreness on pressure; even the epigastrium does not appear to be particularly tender, but pressure upon it, is apt to excite vomiting. The sighing becomes deeper, and a hiccough supervenes, which is not always followed by death. The pulse gradually sinks in fulness and force, but the struggling movement of the heart, and the convulsive or throbbing action of the aorta are rather augmented than abated. The visage of the patient, seldom red in the earlier stages, now becomes deathly pale and shrunk up. He tosses less, becomes listless, indifferent to what is passing round him, and often lies, between his fits of retching, in a

mild coma. Very seldom is there any delirium; he answers well, and does not often mutter when left to himself; there is, however, a peculiar feebleness of attention, inasmuch as many, who have recovered from this advanced stage of the disease, and were supposed, at the time, to be cognizant of all that passed around them, were found afterwards not to remember much of what had transpired; not even the death of relatives, who died from the same disease in the same rooms with themselves. We need not follow these symptoms further, as they bring us to that stage when, from the approach of death, the phenomena must be nearly the same, as in the close of all other maladies. The length of time through which the disease runs, to its termination in recovery or death, varies exceedingly in different cases. In some it comes to a favorable termination within twenty-four hours after the vomiting sets in;—again, that with the other symptoms, continues violent for a week or more, and then ceases. Death, also, occurs at every period from the second or third day, up to the end of the second week. Dr. M. Winans, of Jamestown, Green county, who has had an ample experience in the complaint, thinks that the convalescence from it, is generally rapid; however this may be in many cases, it is an established fact in the District, that relapses, under exercise, are common, and that the patient often remains tremulous, feeble, and stiff in his muscular system, for months; feeling irresolute and destitute of enterprise, and experiencing a slight degree of nausea under any great exertion. We were more than once told by healthy looking individuals, who had experienced the disease some years previously, that they had never since been the "same men they were before." In a few instances, the complaint has recurred

for two or three years, in the season in which it began, without any known reapplication of the remote cause.

As yet we have considered the sick-stomach in its most simple aspect. We must now say something of its complication.

Several medical gentlemen of the District, have met with cases, in which some variety of cerebral inflammation supervened, as was indicated, by a flushed face, red eyes and delirium.

Dr. McGarraugh has seen it combined with ague and fever in two patients. Each disease exhibited its characteristic symptoms—the former continuing throughout the twenty-four hours, the latter intermitting. They both died.

Dr. Toland has met with it in connexion with remitting fever; the disease commencing as the Sick-Stomach, and ending as bilious fever, but the number of these cases has not been great.

The same gentleman with Dr. Robert Houston, of Clark county, and some other physicians of the District, have observed within the last two or three years, that it has been frequently complicated with a variety of mild typhus or typhoid fever; not a little of which has prevailed in localities where the Sick-Stomach does not occur. This combination has modified its symptoms, and increased the difficulty of treating it successfully.

TREATMENT.

The catalogue of remedies employed in this disease, when uninvolved with any other, is not very extensive. We shall enumerate the principal.

1. *Bloodletting.* Although from its general priority, to other

means in the cure of many acute diseases, we place this first, it is, by no means, that on which the chief reliance is placed by the physicians and people of the District. Indeed, not a few of them almost reject it, as they condemn it in the treatment of the Trembles. It is no part of our plan to speculate on this condemnation, as we wish to limit ourselves to facts; and, especially, as some of the most intelligent practitioners of the District frequently employ it.

Thus, Dr. McGarraugh has bled about one-third of his patients. The blood was sometimes buffy, in general not. When the pulse was full and hard, and not very frequent, venesection was most advantageous; when small, it seldom increased in fulness and force, after bleeding. He has not often bled more than once, and then took, in general, about a pint. He found his patients very often inclined to syncope. It was chiefly when some affection of the brain existed, that he took blood.

Dr. Toland has bled less frequently. He has observed the blood, in some cases, to be sizy. His resort to the lancet was almost limited to the cases in which he observed the brain to be affected. Dr. Houston has bled in a few cases only, and does not think highly of the remedy; the same is true of Dr. E. Martin, of Bloomingsburg, Fayette county. Dr. E. Crosby of the same place has never bled; Dr. Winans not very often.

Dr. James M. P. Baskerville, late of Madison county, thinks blood letting of doubtful utility. Has found the blood thick, dark, disposed to early coagulation and without size. The pulse has sunk after bleeding.

These gentlemen may be considered as presenting the estimate of blood letting, made by the physicians of the District generally. When the people treat the disease, they scarcely

ever resort to the lancet. Cupping and leeching of the epigastrium seem not to have been employed.

2. *Cathartics.* These are the remedies which are universally employed. We need not state the individual experience of the physicians. Both they and the people, make the indication of opening the bowels—*the* indication of *cure;* and affirm, that when *it* is accomplished, the patient rapidly recovers. In the forming stages of the disease, this is, in general, easily brought about, and violent symptoms averted. After the vomiting has commenced, the difficulty is greatly increased; as the medicines are ejected from the stomach. It seems to be the experience of the other physicians of the District, as well as of Dr. Baskerville, that bleeding does not promote the operation of cathartics, as in many other acute diseases. Calomel is the medicine, on which the chief reliance is placed. It lies best on the stomach, and is generally given in large and repeated doses. When the patient recovers, a salivation occasionally supervenes. In connexion with this medicine, sulphate of magnesia, senna, castor oil and oil of turpentine have been used, and are thought the best. Croton oil has succeeded in a case or two in Dr. Dawson's hands, but in general disappointed the expectation under which it had been administered. Enemata have been almost constantly used, and often done good, though in many cases they have been returned without effecting the object. The length of time through which the costiveness continues, is sometimes surprisingly great. A respectable merchant, in Washington, Fayette county, who had all the symptoms of the disease, took many large doses of calomel, daily, without the least effect till the fifth day. He then resorted to Seidlitz powders, when the vomiting ceased, and a purging and salivation came on simultaneously. In many other instances,

the constipation has continued still longer, and yet the patient recovered. Thus Dr. Toland attended a youth, 17 years old, whose costiveness continued for fourteen days, and still he recovered. When cathartics at last operate the discharges are not scybalous but dark and liquid.

3. *Opium.* Much reliance is placed on this medicine. It is often given before any thing else, to allay the irritability of the stomach and prepare it for the retention of calomel. It has been combined, advantageously, with that medicine. It has not appeared to increase the constipation.

4. *Counter-irritants.* Blisters, sinapisms and oil of turpentine, have all been applied to the epigastrium; and the weight of testimony is in their favor. Blisters to the ankles have likewise been employed with some advantage.

5. *Cold affusions.* When the head is much affected, either from the disease, or from the liberal use of opium, cold water applied to it, has been of much service. Dr. Toland has, also, subjected his patients to the general cold dash, with advantage. In the case of the patient already mentioned, whose costiveness contined for a fortnight, purging followed on the cold affusion. The Doctor is in the habit of applying external heat, immediately after the cold water, and is thus sometimes enabled to induce perspiration.

6. *Antacids.* These have been used, but not with decided benefit.

7. *Alcoholic tinctures* and other *diffusible stimuli*, seem to have been employed but seldom. In some cases they have been of service.

8. *Drinks.* Dr. McGarraugh has sometimes found demulcent drinks of service. A coffee made of scorched oats, an infusion of wheat, and weak chicken broth have all proved useful.

9. *Treatment of the Convalescent.* The action of the bowels must be kept up, and hearty meals avoided: but above all the patient must refrain from violent exercise. Dr. Toland had a patient, a girl, so far restored, that she ran down a chicken for the purpose of making broth. She suddenly relapsed, and died in twenty-four hours. Dr. McGarraugh has found tonics of service, when the recovery was slow, and thinks chalybeates better than bitters.

Without having exhausted our collection of facts we shall here take leave of the symptoms and treatment of this malady. The members of the Convention will judge for themselves how far it has claims to be regarded as a peculiar disease, and frame their own speculations on its pathology. Our object is to present facts.

CAUSE OF TREMBLES IN HERBIVOROUS ANIMALS.

In speaking of the topographical aspects of the District, we recognized six varieties,—first, prairies—second, flats adjoining these—third, barrens—fourth, hills near the Scioto and Little Miami rivers, and along their longer tributaries—fifth, table-lands covered with heavy oak timber—sixth, slashes or superficial ponds, marshes and wet places, of small individual extent, interspersed through the table-lands, from which they are readily distinguished by a growth of elm, black walnut and burr oak. Now it is the belief, we may say of all the people of the District, that the disease is never generated on the four former, for, it is asserted, as long as the domestic, herbivorous animals are confined to them, they never experience it. The disease originates then, according to this statement, only in the oak table-lands, abounding in elm and walnut slashes. If this be established, one step

towards the discovery of the remote cause is made; but is this assertion of the people correct? That it is, we shall endeavor to show, by the citation of testimony which goes to prove, not only the exemption of the former tracts, but the actual influence of the latter in the production of the endemic.

In our exploration of the District, whenever we traversed the prairies and adjoining flats, or barrens, or hill lands near the rivers, we could not meet with a single person, who had known the disease to occur, in those situations; on the other hand, whenever we came into or near the oak plateaus, every body, not only admitted its existence there, but equally admitted, that as far as he knew or had heard, the other varieties of surface did not produce it. Thus giving testimony against the salubrity of his own lands, and thereby affording satisfactory evidence of his sincerity. On the question, whether the cause is connected with the oak lands themselves, or the elm slashes which they embosom, we found some diversity of opinion, but a large majority fixed the mischief upon the latter, still further narrowing down the field of inquiry, if they should be correct. We shall now proceed to the citation of particular observations and facts, which have a bearing on the whole of these conclusions, beginning with those furnished us by the medical gentlemen of the District.

Dr. Winans, of Jamestown, who has continued his observations for eighteen years in the eastern portions of Green and the western parts of Fayette county, declares, that the disease never prevails except in and near the heavily timbered oak lands; that it is not generated in the prairies, flats, barrens or hills, and that it ceases when the forest is cut down.

Dr. Dawson of the same place, a native of the county, from his own observations has come to the same conclusion.

These gentlemen furnished us with several pertinent facts, two of which we shall give. To the east of Jamestown, there lies an oak plateau, several miles in width, running nearly north and south, and seperating the waters which fall into the Little Miami on the west, from those which flow to the Scioto on the east. This plateau, as those gentlemen testify, and as we ascertained by personal inspection, abounds in elm slashes. In the early settlement of the country, from its elevation of twenty or thirty feet above the valleys on either side, it was supposed to be more salubrious, and many emigrants selected it on that account. It was soon found, however, that their cattle and other domestic animals contracted the Trembles; while those of the settlers in the adjoining valleys remained exempt, except when they wandered into the dense oak forests of the plateau. We shall give two facts in support of this statement.

Dr. Winans, who lives in the valley to the west, some years since, having a farm on the plateau, sent to it a drove of hogs which were to be fed near its enclosures, and suffered to run at large. They were all well, and none of them had ever had the Trembles. In a fortnight many of them wandered back to the village, affected with the disease.

Many years ago a herd of cattle, pastured in the barrens east of this plateau, where the disease has never occurred, escaped from their enclosure, and strayed upon it, where they were allowed to feed for eight or ten days, when they were taken home, and a large proportion of them soon afterwards died of the Trembles.

Dr. Houston, after a residence of twenty years, at South Charleston, assured us, that the disease, so far as herbivorous animals are concerned, is, in that vicinity, limited to flat oak lands, which abounds in wet places, producing elm and black

walnut. Prairies and barrens are numerous within the circle of his practice, and always exempt.

Dr. Henton, of Washington, Fayette county, who has for many years had ample opportunities of observation, assured us, that the disease prevails in, and is limited to, regions abounding in rich, marshy spots, where elm, maple and burr oak show themselves. South-west and west of Washington, much of this surface exists, and the disease has been and still is common and fatal; while south-east and east, to the Scioto, as the land becomes broken it is almost unknown. He has never seen it occur among animals confined to the prairies and barrens.

Dr. McGarraugh, through a still longer residence at the same place, has observed precisely the same thing. The barrens and prairies are exempt, the plateaus of heavily timbered land abounding in elm and walnut slashes, are infested.

Dr. Baskerville, formerly of Madison county, gave us the same result from his observations.

Dr. Bradbury, at present of Ross, but formerly of Clark county, who saw much of the disease, when residing there for five years, declared that the prairies and barrens are free from it, and that it is generated in the flat, wet, heavy timbered lands, abounding in spots covered with white elm and burr oak. Since his removal forty miles to the south-east, into the hilly or rolling land of the Scioto, he has never met with it.

Dr. Martin, of Bloomingsburg, who resided for some time several miles to the east, where the land is more broken, saw but little of the disease; but is familiar with it now, and knows that it is limited in its origin, to the oak forests with elm and maple slashes.

Dr. Crosby, of the same place, after, however, a shorter residence, has come to precisely the same conclusion.

Dr. Dunlap, of Greenfield, resides nearly out of the infected region, as the lands to the south of him are more rolling and dry. All the cases he has known, were to the north, where the varieties of surface so often enumerated exist.

Dr. Wright, of Leesburg, west of Greenfield, has made similar observations.

Dr. Toland, after a practice of twenty years in Madison county, a few miles south of the national road, declares that it is never generated elsewhere than in the heavily timbered flat lands. He travelled with us into a tract, distinguished, as he and the inhabitants assured us, for the production of the disease, and we found the elm, walnut and burr oak slashes, more numerous than we had seen them before. This was west and north-west of London, where he resides—south-east of the town, prairies and barrens abound, and there the disease is almost unknown.

We have thus given the testimony of twelve medical gentlemen, who have for several years been the principal physicians of the District, and, throughout the whole period, had their attention strongly directed to this subject. Scattered over a region, more than forty miles in diameter, they have had but little intercourse, and many of them, as we found, had never seen each other. They have not, therefore, adopted the conclusions of any one, but each has seen for himself, that which the circle of his own observations presented.

Such a mass of evidence might seem sufficient; but as we regard the establishment of this point of much importance, we shall introduce some additional witnesses from among the people.

On the day before leaving Chillicothe, we received from Cadwalleder Wallace, Esq., of that place, a gentleman whose business has long made him familiar with the condition of the District, and a close observer, a communication, in which he expressly declares, that the prairies, barrens and cultivated lands never breed the disease, but that it is generated in the slashy, timbered lands.

Judge Jameson, who has resided for the last twenty-five years, about two miles south-west of Washington, in Fayette county, lived for many years before, in Ross county, twenty-four miles to the south-east of his present residence. He was then in rolling or broken land, and never witnessed a case of the disease. He is now in the midst of elm and maple slashes, and his stock, when permitted to run at large, have suffered from the time he arrived, down to the present. More than once he lost all his horses, before he had pastures enclosed. Of his cattle many have likewise died; but none of them perished in the prairies, barrens or cultivated fields. Among particular facts received from him, we give the following, which was substantiated, independently of his own unquestionable testimony, by that of several other persons. About twenty years ago, being a grazier, he purchased about one hundred head of cattle from his neighbors, and seperated the younger and more infirm, to the number of about thirty, from the rest, and turned them into a new meadow, formed out of elm and maple slashes. Most of the trees had been felled, and the ground harrowed, but not plowed. The sown grass had taken root two years before. The remaining seventy, he placed on the opposite of a narrow lane, in a wood-pasture, the surface of which was precisely of the kind which the meadow *had* been. The whole were salted at the same time, and watered from the same well. Nothing was fed to any of

them. On a certain day, in salting them, they all seemed perfectly well in both fields; but the very next day, between thirty and forty, or about one-half of those running in the woodland pasture, were found to have the Trembles. He immediately turned all that remained well, into the meadow, where four or five of them afterwards sickened with the same disease. Those which were ill, he turned into a corn field, and fed them with unripe indian corn. Nineteen of them died, while not an individual, originally placed in the meadow had the disease.

Jonathan Pierce, who has an extensive grazing farm for cattle and sheep, in the south-eastern part of Clark county, gave us the following fact. Two years ago last fall, thirty of his cattle broke from a *tame* pasture, where the Trembles had never been bred, and browsed for a few days, in a piece of thickly timbered oak land, abounding as we ourselves saw, in elm slashes. Nine were seized with the disease, and four died. He has had ample opportunities of knowing, that cattle may run with impunity in the barrens and prairies.

Judge Harold, a neighbor of Mr. Pierce, communicated to us the following fact. Twelve or fourteen years ago, he enclosed forty-five acres of wild land, about one-third of which was prairie, another part barren, the remainder closely timbered land, with a pond and several elm slashes, precisely like those on which Mr. Pierce's cattle were destroyed. He pastured his stock in this field for six years, without the occurrence of the disease, though they ate down the herbage in the woodland as well as in the other parts. In the seventh year, he determined to mow the prairie, and of course withdrew his stock. The natural herbage of the woodlands now sprang up, in rank luxuriance. Immediately after mowing the prairie, when it could afford no pasture, he turned in ten

head of horses, twelve of cattle, and sixty of sheep. Within a fortnight, several of the horses sickened with the disease, and two or three died; of the cattle, about the same number perished, with the same symptoms; and of the sheep, twelve or fourteen were lost. The next spring, he turned in a large flock of sheep which kept the grass and herbage eaten down, from the time they began to grow, and he, also, deadened the timber, in and around the flats, which he plowed up. A few sheep died within the next two or three years, but since that time, it has been as safe as any other pasture on his farm.

When travelling from London to Springfield, a few miles south of the national road, over the elevated and heavily timbered plateau, which seperates the waters of several branches of the Scioto, Mad river and Little Miami, we conversed with a number of intelligent farmers, among whom we may mention James Porter, Robert Turner and Enoch King, all of whom testified to the extraordinary prevalence of Trembles in that quarter; and we can state from personal observation, that we met with no spot in the District, which in an equal area presented so great a number of elm slashes.

We consider it unnecessary to quote, specifically, the testimony of any other observers, as the whole would tend to the same point.

We feel warranted, then, in deducing and resting upon the following conclusions:

1. That in *this District*, the Trembles in cattle, horses, sheep and hogs, are produced by their frequenting the densely timbered table-land, which from its flatness abounds in wet places and ponds, indicated by the presence of lofty white elms, black walnuts, maples, burr oaks, and other trees, which delight in a rich and moist soil.

2. That when the same animals frequent prairies, barrens, and the hill-lands, near the larger streams, although they may be heavily timbered, they do not contract it; and, consequently, its cause does not exist there, or at least is not efficient.

3. That clearing and cultivation, even girdling the trees, harrowing the ground, and sowing it with grass seed, destroys or renders inactive the cause, whatever it may be.

To these conclusions we add the following, as supported by a multitude of witnesses:

1. That the disease in the same localities, is not equally prevalent every year.

2. That it occasionally occurs in May and June, but its usual time of prevalence, is August, September, October and November.

3. That in proportion to the number of domestic animals now in the District, it is much less prevalent than formerly; and that there has been a regular decrease of it, as the forest was transformed into arable land, and stock were kept within enclosed meadows.

OF THE CAUSE OF SICK-STOMACH OR MILK-SICKNESS, AND THE CONNEXION OF THAT DISEASE WITH THE TREMBLES.

But one *opinion* prevails throughout the District, as to the cause of Sick-Stomach. Both the physicians and people regard it, as an effect of eating the milk or flesh of animals, whose systems have been impressed with, or have received into them, the remote cause of Trembles. An opinion so general and firmly established, in the minds of those who cherish and express it, is undoubtedly entitled to much respect; and, if it did not contravene what are regarded as established physiological principles, might even be adopted

without inquiry into the facts on which it rests. Such an adoption is not, however, admissible here; and we must proceed to ascertain the data from which it has been deduced, that we may judge of their sufficiency.

In doing this, the first that meets us, is the perfect co-existence of the two maladies in time and place. Taken as a general proportion, we are satisfied, from a vast variety of testimony, that this is true; while cases of each malady, occasionally show themselves, when the other is absent, no satisfactory explanation of which can be given in this stage of our enquiry. But the co-existence of two phenomena, does not prove their origin from the same cause, nor of either one from the other. Nevertheless, that this fact deserves consideration, is apparent, from the reflection, that if such a co-existence were wanting, the opinion which prevails would never have been formed, and could not, indeed be entertained. We shall take this, then, as the starting point. The physicians and the people generally of the District, affirm, that in almost every case, which has presented itself, the patient had taken the milk, or its preparations, or the flesh of cattle which had frequented the spots which are known to produce Trembles. Several of the most intelligent of the medical gentlemen assured us, that they had been utterly incredulous on this point, but had been compelled, under continued observavation to concur in the popular belief. It is regarded in the District, as an equally ascertained fact, that when milch cows are kept on meadows, those who use their milk, and do not eat the flesh of such as run in the dense woods, never have the disease, however much it may prevail at the time, among others, who have suffered their cattle to go at large. That milch cows, which frequent spots where Trembles are generated, are uniformly, or almost uniformly exempt, while their

calves suffer severely with all the characteristic symptoms of the malady, is likewise considered certain; and all the people quite as firmly believe, that calves never have the disease, except when their dams are suffered to wander into those spots. The belief as a fact, is equally general, that if the calf die of the disease, and the cow is suffered, as happens invariably, to go dry, she herself, often falls a victim to the Trembles. Many persons are satisfied, that they have known the disease produced in men, by eating the flesh of cattle, which had been brought to the slaughter, directly from places which abound in the remote cause; and all are deeply convinced, that dogs and hogs which eat of the carcases of animals dead of Trembles, are liable to contract from that cause, the same disease.

Having stated these points of popular belief, we shall bring forward a number of facts bearing upon them; throwing those which relate to the pernicious influence of the milk on man and the calf, into one group; and placing in an another, those which relate to the effects of the flesh upon man, the dog, the hog, and the buzzard.

From Dr. McGarraugh, we learned the following facts. Henry Boughn, three miles west of Washington, where the Trembles prevails, persuaded his neighbors to keep up their milch cows: all who did so, escaped Sick-Stomach, those who did not, suffered. One of his neighbors, John Coil, kept up his milch cows for five successive years, and his family escaped the disease, he then permitted them to run out, and his daughter and himself suffered attacks of the malady. Afterwards he kept them in pastures, and had no more of it. William Thompson, of the same neighborhood, had Sick-Stomach in his family, for five or six years, during which he persisted in suffering his cows to run at large. At length he fenced off a

part of his meadow, and put two milch cows into it, keeping them there for two years, through both of which the family were free from the disease; he then suffered them again to run at large, when two of his daughters were taken down, one of whom died.

The following fact, if not so much to the point, is worthy of record. John smith and his wife, near Martinsburg, Fayette county, in the summer of 1838, experienced attacks of the disease, from which they recovered; but between the 1st of July and the 18th of August, they lost six children, with what Dr. McGarraugh, Dr. Henton and Dr. Dunlap, pronounced the same malady. The youngest child, three years old, was the only member of the family that escaped. We conversed with the parents, and the narrative they gave us of their symptoms and feelings, warrants the conclusion of those gentlemen. Their milch cows, four in number, with their other cattle and the calves, all continued well, however, except a yearling, which had an attack of Trembles, just before the illness of the family. The whole ran at large, and went every morning, into a deeply shaded oak plateau, in which we spent several hours, and found numerous elm and maple slashes. It was, indeed, part of a tract, that was noted for causing the Trembles. Anxious to ascertain the existence of some less doubtful cause for this dreadful mortality, we made many inquiries of the survivors, but could fix upon none. All the family had eaten the milk and butter of these cattle.

Judge Carothers who resides about two miles from Smith, in the following year, had three of his children attacked, two of whom died. One was taken on the 8th, another on the 9th, and another on the 29th of September, He kept his milch cows in meadows, and had not before had the disease in his family; but as the grass of that autumn had been with-

ered by the drought, his cattle were suffered to go into a piece of enclosed woodland, which we found on examination to present the characteristic surface. One of his unweaned calves, had a well marked attack of trembles, but recovered. A few days before his children were seized, a young cow, not giving milk, was taken and died. All his family had eaten milk up to the time of the attack. They did not observe any change in its quality.

Judge Jameson, already mentioned, testified, that he never knew a milch cow to have the Trembles; but that he has repeatedly seen their calves affected and die, when the cows ran in the woods which generated the disease. Long as he has lived in the midst of it, not one of his family has experienced an attack. He has always kept his milch cows on meadows. He has seen more than fifty cases of Sick-Stomach, every one of which cccurred in persons who had eaten the milk or its preparations, or the flesh of cattle that had run in woods, where the cause of Trembles existed.

Mr. Yeoman, of Washington, gave us the following statement of his own case, which was confirmed by his family, several of his neighbors, and his physician, Dr. Henton. In 1831, his only milch cow ran in the woods, which around Washington are well known to cause Trembles. She as usual, with cows that are milked, continued well. On the first of June, as the season for Sick-Stomach was approaching, the different members of his family, apprehensive of the disease, left off the use of milk; but he was incredulous, and took it in greater quantities than before. In the course of that month, he became costive, felt torpid and sluggish, was a little debilitated and occasionally experienced slight nausea and giddiness in the morning. About the 5th of July, after a fatiguing walk, all the characteristic symptoms of Sick-

Stomach were developed, and it was five days before his costiveness was overcome. This part of his case we have already stated, in the history of the disease. The calf of this cow, became affected about the same time, but lived. A pig and a puppy were fed on the milk. The former died with the Trembles, and the latter when greatly reduced, with the same disease, was killed to relieve it of its misery. All the members of his family remained well.

Joseph Bloomer, Esq., living two miles out of Washington, from having travelled as sheriff of Fayette county for eight years, is intimately acquainted with the Trembles. He declared to us, that much as he had seen of it, he had never known it to occur in a milch cow.

Dr. Henton, of Washington, has never known a milch cow to have the Trembles. He has seen more than two hundred cases of the Sick-Stomach, all of which he thinks occurred in persons who had used the milk or meat of cattle, that ran in woods which produced the Trembles. Eight years ago, in the month of October, he had fifteen patients, in three families. All their cattle had run at large.

Dr. Winans declared, that milch cows are proverbially exempt from the Trembles; but their calves are often affected, when their mothers run where that disease is generated. He once saw two calves laboring under it, and as an experiment, took one from its mother and gave it other food—it got well: the other was allowed to suck, and died.

Josiah Ballard resides on the oak plateau, already described as lying east of Jamestown. When he first settled there, thirteen years ago, he had some sheep which he kept in a small tame pasture. One of the ewes, which had a lamb, jumped into the woods, for three or four successive days in the morning, and returned to her lamb in the eve-

ning. In four days from the time she first broke out, it was seized with the Trembles, exhibiting the same symptoms as the calf. He has seen other lambs with it since, some of which died. The symptoms were alike in all.

Mr. Ballard, related the following fact of a neighbor, who lived on the plateau a mile east of him. Allen Rakestraw had one milch cow, which was pastured in an enclosure, embracing with a little tame grass, a portion of unsubdued wood land. Three of his family took the disease and all died. They had used the milk.

Dr. Toland has seen colts with the Trembles, before they began to eat; and calves when they were confined in a pen. He has never known a calf to have it, when the cow was on cultivated grass. After a most ample experience, he is convinced, that the Sick-Stomach is always derived from the milk or flesh of the cow. This was not his first opinion.

We have already mentioned the extraordinary prevalence of the Trembles, on the plateau, a few miles west of London, where the elm slashes are of corresponding number. It now remains to say, that the Sick-Stomach has attacked and destroyed great numbers of the people. Robert Turner who has lived twenty-one years in that neighborhood, gave us, assisted in the recollection by Dr. Toland, the names of ten families, living within a mile and a half of his house, in which thirty-five cases of the disease had occurred, nineteen of which proved fatal. Their milch cows all ran in the dense woods of the plateau.

Dr. Houston, formerly, did not believe in the animal origin of the Sick-Stomach, but multiplied observations have made him a convert to that opinion. He mentioned to us his own case as follows:

During his attendance on a family in which the disease had

occurred, he was induced, on two successive days, to drink freely of the same kind of milk they had been using. He became costive, and in a few days was down with all the characteristic symptoms of the malady; which proved so violent, that he took two hundred grains of calomel, before it was subdued. The cows supplying this milk, had run in the woods, and some of their calves had the Trembles.

From the experience of many years, in a region which presented him every summer and autumn, with many cases of the disease, Dr. Bradbury is convinced, that the Trembles in sucking animals, and the Sick-Stomach in man, originate in the use of milk. A patient of his, Douglass, was of a different opinion, and, with his family, continued to use the milk of his cows (which ran at large,) after their calves had been seized with the Trembles: almost every member of his family was taken down with the sickness. Another patient, Harper, made it a practice to keep his milch cows on grass, and his family remained exempt. Once, they escaped from their pasture, and after two days were found in an elm and maple slash. His family ate their milk, after they were brought home, and three or four of its members were attacked with the disease. An acquaintance of his, Baker, had a pack of five or six hounds, among which was a bitch with whelps. He, and several of his calves, while using the milk of cows which ran at large in a woodland tract, were seized with the disease; he recovered, but two or three of them died; the hounds ate of their carcases and all were seized with the Trembles, except the bitch—she escaped, but her whelps were all destroyed.

It would exhaust the patience of the Convention, to give all the facts we have collected on this subject. What are the

legitimate conclusions to be deduced from those we have stated? They *seem* to be the following:

1. It is *certain* that the sucking calf contracts the Trembles, when the cow frequents the places which produce that disease, she herself, mean while, remaining exempt; and the same thing is true of the colt, the lamb and the puppy, when its mother has eaten of the carcase of an animal dead from the Trembles.

2. It is *highly probable*, that the Sick-Stomach is produced by the same cause.

It is not without the greatest misgivings, that we feel constrained to make these deductions. They are certainly not made, from all the facts that might be collected, by further observation; and many others could, by a course of experiments, be brought forth; and, therefore, they are liable to be overturned. We have stated the first as certain, because the amount of positive testimony (of which we have given but a fraction) is, indeed, very great, and stands unopposed by a single authentic observation, that has come to our knowledge. We have given the second as a high probability, but if the first be true, does it not come near establishing the second? If the milk of the cow, whether she herself be ill or not, can excite a specific disease in her calf, may not the same milk raise a specific disease in man? This question, we apprehend, must be answered in the affirmative; and if so, the probability that the Sick-Stomach is of the same origin with the Trembles in the calf, is greatly heightened; and the propriety of naming the disease Milk-Sickness rendered apparent.

Let us now inquire into the alleged effects of eating the flesh of animals, which have died of Trembles, or been

slaughtered while, or soon after, running in woodlands which give birth to that disease; and first—

Of Carnivorous Animals.

Throughout the District, the conviction is deep and unanimous, that dogs which eat the flesh of animals dead from Trembles, are in danger of the same disease; in fact, that they never contract it in any other way. As a consequence of this opinion, it is common to bury or burn up the carcases of cattle, horses and sheep, as soon as they die, and thus the opportunities for acquiring new facts on this point, have become exceedingly rare. Entertaining strong suspicions of the correctness of this opinion, we were led to make extensive and scrutinizing inquiry, the result of which is, that if we believe any thing touching the whole matter, we must believe this. Without making special citations of fact, we may give the names of a few witnesses:—Drs. McGarraugh, Bradbury, Baskerville, Toland, and Winans; the Rev. Jesse Rowe; Judges, Harold, Carothers, and Jameson; and Messrs. Bloomer, Draper, Ballard, Pierce, Boyer, Janes, and Horney. All these gentlemen reside in various parts of the District, are intelligent and respectable, and testify of what had fallen under their own observation. They and many others, also affirmed, that they had never known a dog to have the Trembles, unless some animal had died of that disease in the neighborhood.

Considering this fact as established, we may proceed to say, that many of these witnesses and other persons in the District, state, that they have repeatedly known hogs to contract the disease from the same origin.

As bearing on this point, we shall give the following state-

ment from Mrs. Jeremiah Warder, of Springfield, Clark county, a lady whose philosophical accuracy, is equalled, only by the benevolent interest she has, for several years, displayed in these inquiries.

Early in the month of September last, a calf owned by one of Mr. Wardeh's tenants, escaped from its enclosure and passed a night in a spot known before to have generated the Trembles. Reclaimed, and placed in a field, it died the following night, but the symptoms which attended its illness are not given. On the succeeding day, the hogs of the farm, found the carcase and soon devoured all except the bones. A few other hogs, the property of a neighbor, were in the gang. The very next morning, when those belonging to the farm were to be fed, it was found that many of them were sick, some dying and others dead. The former were observed to have swollen throats, were very feeble, would stagger and fall when driven about, lie grunting for a while and then rise. Nearly the whole, amounting to more than forty, died. Those from the neighboring farm, which partook of the carcase, also died.

It must be admitted that we have not sufficient evidence that these animals had the Trembles, but the incident shows that hogs *may* be destroyed, by eating the flesh of a dead calf, a fact which goes to the support of the proposition now under discussion.

The testimony in regard to buzzards is limited and unsatisfactory. We may state, however, that several persons, some of whom have just been mentioned, have occasionally met with one of these birds, which after feasting on the carcase of an animal that had died of Trembles, was unable to fly, and appeared to have great muscular infirmity.

Of Man.

If dogs and hogs are injured by feeding on the carcases of animals, which die of Trembles, and calves and other young animals, which suck are made sick, when their dams are exposed to the remote cause of Trembles, we can see no reason, *apriori*, why the flesh of animals thus exposed, may not injure those who may happen to eat it. True, they do not partake of cattle which died from the disease; but if the flesh of *such* be poisonous, it might have been so, for some time before death. Analogy, moreover, supplies us with an argument. If the milk of the cow can cause the Trembles and Sick-Stomach, she herself not manifesting the external symptoms of the disease, it is not, perhaps, unwarrantable to believe, that the flesh of the steer, slaughtered from the infected woods, may originate the disease in those who eat it. On this point we must recollect one, and perhaps the greatest peculiarity of this affection—the influence of exercise, in suddenly bringing on those symptoms, by which it is recognized. Muscular exertion, however, could not give rise to this effect, if the blood and organic system were in a sound and natural condition; bnt in what their departure from such a state consists, it would be vain to conjecture. It may, perhaps, be similar to that of an individual, who has received the impress of the cause of yellow or bilious fever, and in whom the disease is awakened, even after he has withdrawn from the infected spot, by some slight irregularity. Should it be argued, in the case of Trembles, that there is no latent morbid condition, because the animal retains its appetite, we may reply, that in all stages of the disease, up to dissolution, it continues to eat. It may, however, be said, that if the

flesh of animals thus predisposed to the malady, is unhealthy, many persons ought to be injured, as cattle are often taken from the thick woods, to be slaughtered for the table. To which we answer, that the danger, and the means of detection, are perfectly understood in the District. Judge Jameson and others informed us, that they never kill a beef from the woods, without first chasing it; that many of his cattle had died of the Trembles on their way to the Cincinnati market; and we learned from other sources, that it is a common practice for purchasers to employ this test. With this precaution, it is not likely, if the flesh of cattle exposed to the remote cause, but not down with the disease, be unhealthy, that many persons would be injured by it.

Let not our speculations on this branch of the subject be confounded with the facts of our Memoir. We are not aiming to prove, by *argument*, that persons *are* injured by eating the flesh of those animals; but merely to show on principle, its *possibility*, as a justification for stating a few alleged facts, which we cannot omit, without neglecting to notice one of the most current opinions of the people of the District.

The following, narrated to us by Dr. McGarraugh, the attending physician, was afterwards confirmed by Judge Jameson, at whose house two of the patients died.

In Washington, Fayette county, many years ago, a butcher, by the name of Grady, went eight or ten miles into the country south-west of the town, where the Trembles have prevailed from the first settlement of the county, and purchased two cattle for beef. In driving them to town, one took the Trembles and was left by the way; the other was driven on, but was so stiff the next morning, it could scarcely walk. In this condition, it was slaughtered and sold to consumers. Six or seven of them, before night, and three several days

afterwards, were seized with the Sick-Stomach, of whom five died. The whole of these were Dr. McG.'s patients, and he heard of several others, who were attacked on the day of the purchase, but whom he did not see.

In the neighborhood of Jamestown, two intemperate men, by the name of Reagan, killed a calf affected with the Trembles, and ate of it; the wife and daughter of one of them, did the same. The whole were seized with Sick-Stomach, of whom the men died, but the women recovered. This narrative we received from Dr. Winans; who with many others assured us, that intemperate men, are not only *most* liable to this disease, but more apt to die from it than others.

Mr. Hammond, near South Charleston, killed a beef from a wood known to generate the disease. Three out of his family ate of the meat, and had the Sick-Stomach. Two other families used it, and several of their members experienced attacks. This fact was given us by Dr. Houston.

Other facts of a similar kind, but vaguely stated, we shall not relate; but proceed, in the conclusion of this branch of our subject, to mention two or three, which if true, would show that the carcases of animals, dying of the Trembles, may seriously affect those who handle them.

Some time ago, Enoch Wilkins, a poor man, who lived four miles from South Charleston, on a spot greatly affected by Trembles and Sick-Stomach, lost a fat steer by the former disease. He skinned the animal, and he and his wife and daughter, rendered out the tallow, some of which was made into candles. Soon afterwards they were all taken down with the disease, but recovered. The candles, in burning, emitted an offensive smell. The family declared, that they had not eaten milk, butter nor beef, for several months be-

fore. We derived this statement from Judge Harold and Jonathan Peirce.

Many years ago, Lewis Skilling, already mentioned, as living four miles west of South Charleston, lost about the same time, twenty-one head of cattle, with the Trembles. He and his wife skinned them, and rendered some of the tallow. The candles made from it, in burning, gave out such an offensive smell, that they were thrown away. Both of these persons were taken down soon afterwards, and brought to the brink of the grave. They narrated to us their symptoms, all of which were strictly characteristic of Sick-Stomach, in its most malignant degree. The children in this family did not suffer from the disease; nor were there any other attacks among them. Both before and afterwards, his milch cows were kept in meadows. No part of this story could have been prepared for our use, as it was told to us and written down, at a casual meeting on the high road. We assured ourselves, moreover, by inquiry in South Charleston, that the parties were of a highly credible character.

Such statements must necessarily remind the members of the Convention, of the dreadful diseases, which are some time awakened in the practical anatomist, by the slightest puncture with his knife; although putrefaction may not have commenced. In such cases the poison is probably generated during the disease, and not after death.

Two pathological opinions prevail in the District, on the manner in which the milk and flesh of cattle and other animals become poisonous. One, and the most current, is, that a poison swallowed by the animal, is absorbed, and secreted with the milk, or deposited in the flesh. According to this view, the same agent, not decomposed by passing through

its system, which causes disease in the animal, likewise occasions it in man and the animals, which are subjected to the use of milk and meat thus impregnated. The other speculation is, that the original poison excites in the animal taking it, an unhealthy secretory action, by which a virus of a peculiar kind is generated. Facts for a satisfactory decision on these hypotheses, do not exist, and we present them, merely as points for future investigation.

OF THE SPECIAL CAUSE OF THE TREMBLES.

Assuming it to be ascertained, that the special cause of Trembles, in the District, and we travel not beyond its limits, is something peculiar to certain humid spots, provincially called slashes, which are interspersed, beneath the dense oak forests, over the plateaus or table lands of the District, we shall proceed to inquire what does, or may be admitted to exist in them, which can cause such a serious malady.

The possible causes may be thrown into three divisions—those which are of mineral or geological origin—those which result from the decomposition of organic matter—and those which belong to the living vegetable kingdom. The two first may be dissolved in water and drunk, or exhaled as gases, to enter the lungs, or act on the surface of the body—the last may exist in the substance of the plants, and be eaten, or pass off from them as a gaseous exhalation to exert itself upon the surfaces with which it may come in contact.

I.—*Mineral Poisons.*

These spots repose on a secondary limestone, and can derive from it no poisonous impregnation, not imparted by

the same rock elsewhere. It is, moreover, the underlying rock of considerable tracts within the District, where it appears at the surface, while in the table-land it is buried up; and still the former remain exempt, while the latter are liable. It is worthy of remark, however, that blende (or sulphuret of zinc) has been found in one place, as an imbedded mineral. Now the sulphate of zinc is an active substance which readily excites vomiting, and, from the analogy between zinc and lead, we might conjecture, that the latter may exert on the muscular system, effects of a peculiar kind, such effects, for example, as make a prominent part of the symptoms in the Trembles. It is not necessary, however, to dwell on this speculation, as the transformation of these spots into cultivated land, puts an end to the disease, although many of them may continue to be ponds, and afford water for stock.

The strata of diluvial clay and sand, which make the beds of these spots, have not been analyzed, and may, it might be affirmed, contain poisonous substances, soluble in water. The same clay, however, constitutes the sub-stratum of parts of the District, where the disease never occurs; wells, the water of which is salubrious, are dug in it; finally, its influence would remain unimpaired, after the forest was destroyed.

Mineral exhalations of no kind can be admitted, as the cause of this disease, as they would occur equally, in the intervening barrens and prairies, and continue, moreover, after the destruction of the forest, while the disease does not.

We may, then, safely deny a mineral origin to this malady; although the soil has not been analyzed.

II.—*Gases developed by the decomposition of Organic Matter.*

The soil in these spots, is manifestly composed of that washed into them from the surrounding higher parts of the plateau in former times, and of the the remains of many generations of plants, and small aquatic animals, embracing a minute bivalve shell-fish belonging to the genus *Unio*, which have died and been decomposed by putrefaction. As this fermentation is constantly going on, except in cold weather, there must be a continued exhalation of gases or miasms, and to this cause many persons in the District ascribe the Trembles. The principal facts and suggestions in support of the miasmatic hypothesis are—

1. The season of the year when it prevails, being the same with autumnal fever, which the argument assumes to be produced by some kind of malaria.

2. The fact, affirmed by Dr. Baskerville, a zealous advocate of this theory, and supported by Robert Turner, Enoch King and several other respectable farmers, who cite their experience,—that if cattle be kept in pastures and yards at night, and not suffered to lie in the woods, they neither have the Trembles, nor by their milk excite the Sick-Stomach. Whether all cattle and other animals, if thus treated would escape, cannot of course be known. That particular facts of the kind, have been correctly reported, we do not feel at liberty to doubt. It is, certainly in harmony with the existing state of our knowledge, that lying through the night on damp ground in a deep forest, should favor the action of malaria.

3. The places which originate the disease, are precisely such, as we should expect to generate malaria.

4. When they are converted into tilled land or meadow, the disease ceases.

5. The soil of those places, bears a striking resemblance to that of the prairies, which are natural meadows, and which might perhaps be infested with Trembles, but for some correcting influence of the natural grasses with which they abound.

These facts and suggestions, seem at first view to give some plausibility to the miasmatic theory of Trembles; but formidable objections lie against it. The greater liability of cattle that remain in the woods at night, than of those which are kept in open fields, even if it were established as a general fact, which it is not, would not prove that the disease depended on malaria, for that kind of exposure might be only an exciting cause; nor would it explain the exemption of the milch cow. The margins of streams and various other localities within the District, are infected with the diseases which are ascribed to malaria, without generating the Trembles. Finally, the plants which undergo decomposition in those receptacles, are of the same kinds which are decaying in places, where the Trembles do not prevail; though, out of the same materials, placed under similar circumstances, the same gases ought to be formed. We are, therefore, in the present state of our knowledge, obliged to regard this hypothesis as unsatisfactory.

A modification of the miasmatic theory is that, which supposes the poison developed in the decay of the organic matter, to be absorbed by the water, and drunk by the animals; but this relates only to the mode of its introduction into their systems; and after being liable to the objections just stated, is still further defective, in having no analogy to support it.

III.—*Of Vegetable Poisons.*

Rejecting the articles embraced in our first and second divisions, we find ourselves thrown upon the third, and here we are in association with a great majority of the physicians and people of the District. But although they concur in the opinion of a vegetable origin, they differ widely as to the particular plant.

At first view, all the circumstances would seem to be in favor of this division, as furnishing the special cause. The disease begins in herbivorous animals; they feed among plants, many of which are virulent; it is a well known general fact, that cattle sometimes kill themselves by eating noxious plants; many pre-existing facts go to show, that the flesh and secreted fluids of herbivorous animals are often modified by their food, and that substances of unusual color or odor, not unfrequently manifest their presence, or that of some of their elements, in the solids of the body and in the fluids and gases excreted from the kidneys, the skin and the lungs. There is then much plausibility in the opinion, that the Trembles are occasioned by the eating of a plant, while there is nothing physiologically *absurd*, in the hypotheses of of a contamination of the flesh and milk of the animal. Here then we have a substantial foundation to stand upon, and from whence to extend our inquiries after the particular plant. But before we commence, it is proper to refer to an opinion, held by some persons in the District, that the disease may be the offspring of several. This we consider untenable, inasmuch as different poisonous plants vary from each other in their mode of action and effects, and of course, the symptoms vary; but the symptoms of Trembles are remarka-

bly uniform—as much the same, indeed, as those produced by opium, tartar emetic, arsenic or the preparations of lead.

For a plant to produce the Trembles, it must be one that is noxious; that is not very minute, for the cow, when placed in the midst of abundance, is disposed to browse on the larger; it must be acceptable to the taste of cattle, horses and sheep, not to extend the catalogue, or else it will not be eaten by all which contract the disease; it must be in leaf in autumn as well as summer; it must grow abundantly in and around the spots which generate the disease, and sparsely or not at all in the surrounding plateaus, or in other localities of the District; lastly it must be liable to destruction under simple deadening of the timber, harrowing of the ground, and scattering over it the seeds of any of the grasses.

Having laid down these tests, let us proceed to apply them to the different plants which have been charged with the mischief; or which, if not charged, may, from their known activity, deserve to be scrutinized.

From the beginning of our exploration, we had understood, that the spots which the people call slashes, were supposed to be those which generated the disease, and of course we directed a special attention towards them.

To the results of our inspection, already stated, we may here add, that we could not find in one of those spots, a plant either shrubby, climbing or herbaceous, that was new, or that does not grow in other places. This fact of course limits our inquiry, to the influence of known active vegetables, any one of which *might* be the cause of the malady; but was not likely to be, unless it grew there in greater quantities than in other parts of the District. Among the known active herbaceous plants, which we had presumed

might, perhaps, exist there, in unwonted luxuriance, were some species of the genera, lobelia, ranunculus, caltha, gillenia, euphorbia, asclepias, and some of the umbelliferæ; but a careful inspection soon convinced us, that with very few exceptions, the members of these genera, were not more abundant and luxuriant in and about those, than other places in which the Trembles do not prevail. Several of them, indeed, as the asclepias decumbens, the gillenia stipulacea and lobelia inflata, all active plants, were rarer than common in those localities; we were compelled, therefore, to abandon the whole, and turn our inquiry upon those which the people of the District have charged with producing the disease, and,

1.—*Of the Eupatorium Ageratoides.* Early in November, 1838, Mr. John Rowe, a farmer of Fayette county, eight miles south of Washington, announced in one of the newspapers of the town, that on the 1st day of October, he had discovered the herb which causes the Trembles in cattle. The same paper contained a brief account of some experiments made by Mr. Rowe, and a notice that others were in progress. About the time of this publication, we received from Mr. Daniel McClean, of Washington, a letter of the same purport, and a box of the plant. On opening it, we at once recognized a familiar species of eupatorium; but to be assured on this point, we gave specimens to Mr. T. G. Lee and Dr. J. A. Warder, of Cincinnati, both cultivators of Botany, who pronounced to be the *e. ageratoides* of Linnæus—*e. urticafolium* of Michaux; one of the common and widely disseminated autumnal plants of the United States. In the following autumn Mr. Rowe was invited by several graziers, of Madison county, to visit them and make experiments upon such of their cattle as he might select; which he did, with such results, as encouraged him, in the following winter, to

visit Columbus, and endeavor to bring the subject before the Legislature of Ohio.

On planning the visit to the District, which has given rise to this Memoir, we of course determined to see Mr. Rowe, as early as practicable, and accordingly spent the second day of our sojourn with him—becoming his pupil, and listening attentively to all his statements. He had no written or printed account of his experiments and observations in the preceding autumn, but from his recollections, and from subsequent conversation with Mr. James Porter, one of the farmers who had invited him into Madison, and Dr. Baskerville, who had made a *post mortem* examination of one of the animals sacrificed in his experiments, we collected the following facts: A fluid extract of the eupatorium, given in gill doses, at short intervals, killed a pig in twelve hours. The lining membrane of its stomach bore evident marks of inflammation and mortification. A calf at first refused to eat the herb, but no other food being allowed, at length, it ate plentifully. In about two weeks, it gave evident signs of being affected, and was pronounced by good judges to have the Trembles. Two other cattle, a steer and a calf, ate the eupatorium reluctantly, and were allowed a quantity of oats at the same time. In about a week, they were pronounced, by the farmers who saw them to have the Ttrembles. They died, and the calf was examined by Dr. Baskerville, who found small dark colored spots in the digestive mucous membrane, which, however, was in general white. He thought it softened. The contents of the intestines were dry and scybalous.

We are not aware of the existence of any other evidence, in support of Mr. Rowe's discovery. On our suggesting to him, that his plant grew extensively over the United States,

he declared that he knew of two others, which so nearly resembled as to be mistaken for it. To become acquainted with them, we proposed a visit to the woods in which they grew. Those which he designated, four or five in number, belonged without exception to the other genera, and of course bore but a faint resemblance to the eupatorium.

It must be admitted, that the plant on which Mr. Rowe experimented, possesses some active properties, as four animals under its use, died with what were pronounced to be symptoms of Trembles. Still, the mode of conducting the experiments, differed too widely from that in which the animal is likely to eat the poisonous plant, in the woods; and the decision that the animals killed by it, *had* the Trembles, is far from conclusive or binding. We know from much conversation with Mr. Rowe himself, and the farmers generally of the District, that their diagnosis is taken entirely from the debility, stiffness or unsteadiness of the muscular system. Now if a quadruped be ill from any cause, as, for example, an inflammation of the stomach, its muscular function becomes impaired, and when it is driven about, it falters and is liable to fall, as a *man* would if compelled to run or walk under the same disease. A professional scrutiny only can be relied on in such cases. The testimony adduced by Mr. Rowe is, therefore, defective and inconclusive, even if nothing could be found to oppose it; but there are several facts which directly invalidate it.

1. The plant grows in every part of the District, except the prairies, as well as in all the fertile woodlands of the Western states. In the District it is abundant and very luxuriant in the rich, broken lands where the forest has been thinned out, so as to let in the sun, but the Trembles do not occur there. In the barrens, where the soil is not too poor,

it is equally common. In both tracts, however, it makes but little show in autumn, the time of its flowering, unless the grounds are enclosed, for the cattle eat it, almost as fast as it grows. As to the spots which generate the the disease, so far from presenting it in any unusual quantity, they actually produce less, for it does not flourish well in damp and shaded situations.

2. Mrs. Boughn, near Wasington, had an open woodland pasture, which from not being eaten down, through the summer, became perfectly white in early autumn, with the flowers of this plant, which had attained the elevation of three or four feet. In this condition, she turned in her stock of cattle and horses, which eat up, as we might say, the whole crop, but they all remained healthy.

Mr. Blue, near Jeffersonville, took us into a pasture field of the same kind, which the year before was in the same state, and was then rented to one of his neighbors, who drove his stock into it. They remained there for some weeks, feeding upon it with the other herbage, but none of them contracted the Trembles.

On the plantation of Richard Douglas, Esq., three miles from Jeffersonville, we saw more than one hundred head of cattle, in a wood-pasture of great extent, where the eupatorium was growing in profusion, in every place which was inaccessible to these animals, while it was reduced in quantity in all others, by being eaten.

Numerous additional facts might be cited, but we consider these sufficient, to prove that we must seek for some other cause for Trembles, than the eupatorium ageratoides.

2.—The *Bignonia Capreolata.* This is a woody and perennial vine, with many branching and tortuous slender limbs, and opposite conjugate or double leaves. It spreads over

bushes and small trees, attaching itself by tendrils, which spring from the common foot stalks of the conjugate leaves. It is known among the people, under two names, Creeper and Straight Mercury. It grows in considerable abundance in and about some of the places, which are regarded as the sources of the Trembles.

Mrs. Goodnight, who has resided on the banks of the Rattle Snake Fork of Paint creek, ten miles south of Washington, in Fayette county, more than twenty years ago, lost her cattle and sheep with the Trembles, when she first settled there; and being told that the bignonia was the cause, she had a tangled patch of the vine which existed in their pasture, destroyed, after which the disease did not show itself. The same lady, boiled the shrub in milk, and fed it to a dog, which at the end of a week was said to be attacked with the disease.

Willis Fergus, of the same county, transferred a healthy steer from a field to an enclosure, containing a thicket of this vine, where in a short time he took the disease.

Felty Coil, of the same county, many years since, had two calves seized with the Trembles in winter. By following their tracts it was found that they had been eating largely of this vine, which still retains its green leaves, at that season.

For these facts we are indebted to a manuscript address of Dr. McGarraugh, (President of the Highland Medical Society, and an advocate of the claims of this plant,) obligingly furnished us by its Secretary, Dr. C. C. Sams. It must be admitted, that they merit consideration; and we may add to them that this vine does not grow generally throughout the District. But much additional evidence is required, and some objections lie against its claims.

1. Other plants, known to be virulent, grow in and about the same places, intermingled with the bignonia.

2. It is not known from other observations or experiments, that this plant possesses virulent qualities. The experiment on Mrs. Goodnight's dog is inconclusive, because he might have eaten of the carcase of an animal dead of Trembles. This vine is, moreover, like the bignonia radicans, or common trumpet flower, cultivated in our gardens and shrubberies, and if it possessed deleterious properties, they would in all probability have been disclosed ere this.

3. According to our own observations while the District, this vine does not grow in very great abundance, and is sometimes nearly or quite absent from spots which generate the disease.

4. The observations here presented, were made many years ago, and might have been expected to have been followed by others; but such seems not to have been the case, for in all our journeying through the District, not one was communicated to us.

It cannot, then, on the testimony which now exists, be admitted, that the bignonia is the cause of the Trembles.

3.—Of the *Fungi.* These are a great natural order of plants embracing mushrooms, champignons, toad stools, &c. Dr. Winans has suggested, that some one or more of these plants, may be the cause of Trembles. Many of them are known to be poisonous; especially, when they grow in deep and damp woods. He has observed them to be abundant on the oak plateau, east of Jamestown, already so often referred to, as generating the disease. In the woods where the cattle of John Smith, who lost six children with Sick-Stomach, were known to feed, we saw them in abundance. Four or

five species might be recognized, some of which were exceedingly acrid to the taste. This was in September, when the disease generally prevails. We were told by some persons in the District, that they had observed cattle feeding upon them. These circumstances give some probability to the conjecture of Dr. Winans. When we asked him for particular facts, he frankly answered us that he had none. He did not even know that animals subject to the Trembles, ever eat of this tribe of plants, so remote in their nature and appearance from that herbage, which is their natural food. Our enquiries of other persons were answered in the same manner. We must, therefore, regard the hypopothesis of Dr. Winans as merely presenting a new subject for investigation.

4.—*Rhus Venenata* of Decandolle. This shrub, the R. vernix of Linnæus and many other botanists, is known by the people under the names of poison sumach, swamp elder, poison ash, swamp dogwood, &c. It is a shrub which grows from eight or ten to fifteen or twenty feet in height, delighting in rich swamps. It is occasionally found, but not abundantly, in the spots which produce the Trembles. Although an active plant, producing in many who handle it, or are even exposed to its exhalations, a severe but temporary disease of the skin, there is we believe, no observation made in the District, that goes to show its agency in the production of the Trembles. Occurring, moreover, around and in the prairies, which are proverbially exempt, and growing to such an altitude as to render its leaves and twigs, to a great degree, inaccessable to sheep and even cattle, no other reason could be assigned for regarding it as the cause of the Trembles, than its reputed virulence, and its presence, to a moderate extent, where the disease prevails.

V.—*Rhus Toxicodendron* of Linnæus. This is the last plant which we propose to examine in connexion with the Trembles. Its botanical history first claims our attention. By Linnæus and the followers of that great man, it was regarded as an humble shrub, of virulent properties, growing in some of the same localities, with what was considered as a distinct species of *rhus*, and called by him *radicans*, from the radicles, by which its ascending stem attaches itself to the loftiest trees. Later botanists have, however, made but one species of the two, and Drs. Torrey and Gray in their great standard work, the Flora of North America, now publishing, have adopted this consolidation; making varieties of the two Linnæan species, and applying to both the specific epithet *toxicodendron*. One, the former of these varieties, presenting a single smooth and unbranching stem, has received the popular name of poison oak—the other, a climbing vine with many branches, is called poison vine and poison ivy. They have no claim, however, to be regarded even as *varieties;* for, as we ascertained, while in the District, they are but different stems from the same root. This was done by detaching the variety *radicans*, or poison vine, from the trunk of the tree, and tearing up its roots, when stems of the variety *toxicodendron*, or poison oak, came up attached to them; being, in fact, but scions, like those which the white flowering locust (*robinia pseudacacia*) is known to send up, and which no botanist would think of erecting into a separate variety from the tree itself. It is true that these separate stems or scions of the *rhus*, are without radicles; but so are the limbs or branches of the main trunk of the ascending vine. These branches, however, when they grow into contact with a solid body, or even happen in crossing each other to touch, immediately send out radi-

cles; and the stems of the scions, whenever they find a solid support, immediately do the same. It seems, indeed, to be a law of the vegetation of this plant, that it sends forth radicles, alike above and below the surface of the ground, when in contact with solid matter, but never to produce them, in the absence of such contact, when they could be of no use to the plant.

When the *R. toxicodendron* grows in dry situations and hard ground, it sends up few or no shoots; and the, so called, *poison oak* disappears; but when it finds itself radicated in a rich, loose, and permanently wet soil, it sends out its horizontal roots far and wide, from which start up numerous shoots, that rise to the height of two or three feet, and present a shrubbery of what is called poison oak.

Now, it is precisely under these circumstances, that we find the *R. toxicodendron*, in the slashes of the oak plateaus, where the Trembles are generated. And the *number* of vines is so great, as to encircle and garnish a majority of all the trees which grow in these fertile spots.

By these statements and explanations, we are prepared to inquire into the validity of the opinion, that this plant is the cause of Trembles. This may be said to be the *popular* opinion of the District. An aged and respectable farmer, three miles South Charleston, whose name we did not record, informed us, that more than thirty years ago, when he first emigrated to Ohio from Kentucky, he followed, in the snow, the track of several horses, to a pond where they went for drink, and found that they had eaten liberally of the tender stems, of what he called the poison oak. They were soon afterwards seized with the Trembles. We mention this fact, chiefly to show the antiquity, in the District, of this opinion. That it has been cherished so long, and by so many, is some

evidence of its truth. But we cannot allow that it rests upon positive observations and experiments. We shall proceed to state such of the facts and arguments on both sides of the question, as were collected, or occurred to us while in the District, beginning with those which oppose the opinion.

1. It has been said, that this plant grows in various parts of the District, where the Trembles do not occur. To this we reply, that they present but few slashes, have not much of the climbing vine, and from the condition of the surface, it sends up but few scions. It is not, therefore, within the reach, or is much *less* within the reach, of herbivorous animals, than in those tracts where the Trembles prevail.

2. Many cattle run on the slashes where the scions of the *Rhus* grow abundantly, without contracting the disease. But it does not follow, that all herbivorous animals, which go at large, will eat the *Rhus*. It has, moreover, this peculiarity. Its poison affects only a part of the people who handle it; and the same poison, may only affect a part of the animals that eat it. This objection, however, may be raised against any other plant; or, indeed, any cause whatever, with as much propriety as against the *Rhus*. Of the inhabitants residing in the same region, some in autumn will escape bilious fever, and others be taken down, while all are equally exposed.

3. Dr. McGarraugh states, that a gentleman in Washington, a few years ago, enclosed a large woodland pasture, adjoining the town plat, in which there were several acres overspread with this vine. It was eaten down by his cattle, all of which, however, remained well. To this fact, we may add, that in the latter part of the September last, Mr. Albert Douglass, a student of medicine, at our request, when sojourning on his father's farm, in Fayette county, subjected a

steer to the use of this plant, mixed with hay, for ten days, without any injurious effect, although the animal ate it freely. On the former of these facts we may remark, that as all the woodlands about Washington have been charged with producing Trembles, and are, as we know not only from the growth of the *Rhus* upon them, but from personal observation, precisely of the kind which generates the disease, the experiment is as valid against every other cause as against the *Rhus*. Of the second, we may say, that before the experiment was commenced, the leaves had been touched by frost, and might have lost their activity; and that the animal might have had a peculiarity of constitution, which rendered it as insusceptible to the action of the poison as was the person who gathered the leaves, to its action on his skin.

4. There is no conclusive evidence of a single case of Trembles, having been produced by the *Rhus;* which militates against the theory, inasmuch as the abundance of the plant, and the long period through which the attention of the people of the District, has been turned upon it, might have been expected to bring out some well authenticated case.

We shall now proceed to consider the affirmative, in doing which, we shall bring this plant to the tests which have been laid down.

1. It exhales a noxious effluvium and appears to contain a poisonous juice.

2. It is of a proper size to be eaten by, while it is accessible to, all the herbivorous animals, which are subject to the disease.

3. Cattle and horses are known to eat it, when not constrained to do so by the want of other food.

4. It is in leaf in summer and autumn when the disease

chiefly prevails; and its pith and tender stems, may be eaten in winter.

5. It grows abundantly in and around the spots which appear to produce the disease; and most abundantly where the disease has prevailed most; as on the plateau west of London; while it is scarce in all those portions of the District, from which the disease is absent.

6. By cutting down or deadening the trees to which the *Rhus* attaches itself, and by breaking up the surface of the ground, the whole plant is immediately destroyed, and with this change the disease disappears.

Thus the *Rhus toxicodendron* stands the whole of our proposed tests. Does this, however, prove it to be the cause of Trembles? Certainly not, but it shows, that this plant *may be* the cause, and renders the popular opinion of the District highly probable.

PREVENTION OF THE TREMBLES AND MILK-SICKNESS.

According to the facts and views of this Memoir, the prevention of Milk-Sickness within the District, (and we shall not extend our conclusions beyond its narrow limits) depends on securing milch cows and beef cattle, from the action of the cause of Trembles. This may be done, either by confining them to cultivated pastures, where they are always safe, or by destroying the cause, when they might run at large with equal impunity. The confinement of milch and beef cattle to cultivated fields, can be neither difficult nor expensive, to any but pioneers of the forest; and if the evil were limited to them, the subject would scarcely deserve further investigation. The Trembles, however, destroy cattle, horses, hogs and sheep, which constitute a large portion of the personal pro-

perty of the farmers of the District, few of whom are or can be prepared, to pasture the whole of their stock; and hence the necessity, if possible, of extirpating its cause. The people have constantly assumed, that if the cause could be discovered, it could of course be removed. But this might or might not be the case. Suppose it were a mineral impregnation of the water? it could not be corrected; or malaria? its generation could not, in all probability be prevented; or a plant, disseminated among others? it could not be eradicated, leaving them behind. Our inquiries have led us to the last as the most probable conclusion; and we have made some efforts to discover the particular species, but these efforts were instigated more by the desire to gratify popular and scientific curiosity, than under the conviction, that when discovered it could be destroyed by any other means, than those which would, at the same time, destroy its companions of the forest. With these views before us, we must regard the discovery of the kind of *localities*, which give rise to the disease, as the greatest that could be made; and the *only* one which is necessary, to the choice and execution of the requisite measures of prevention.

Now, throughout this Memoir, we have almost adopted the opinion, that the elm and *Rhus* slashes of the oak plateaus, and these alone, are the abode of the special cause of the Trembles; but candor requires us to say, that this has not been conclusively proven; nor is it the opinion of *all* the inhabitants of the District, for we met with several intelligent and observing persons, who believed that the drier and more extensive portions of the plateaus, and they only, generate the special cause.

The final decision of this question cannot be made without additional facts; the acquisition of which cannot be easily

made, from the great number of slashes, and the consequent difficulty of making seperate experiments upon them, and the other parts of the plateaus. If it should be found, that the cause is in the latter, the means of prevention will be too expensive to be employed in advance of their full settlement; but if it exists in the slashes, and there only, it might be destroyed with great facility, and at a moderate expense, by clearing and cultivation. It is not even necessary to cut down the timber and clear it off, to bring about the desirable security. Deadening it and letting in the sun, answer the purpose, espcially if the spots be sown with the seeds of any of the grasses. The effect of this deadening is to kill the *Rhus;* not merely its ascending stem, which is necessarily cut through in the process of girdling the tree, but also the root, and with it, as a matter of course, the shrubbery of scions called poison oak. Thus, with one day's labor, a single man, might not only destroy all the poison oak in many of these slashes; but set on foot an extensive change in its vegetation, which in a couple of years would be completed without any other labor; though the result would be rendered more certain, by foddering cattle upon them for a winter, or harowing the surface, or mowing down the weeds, and sowing it with grass seed.

In conclusion we may say, that if these spots generate the disease, it could be of no practical utility to know that *a* plant is the special cause, much less to know the *particular* plant, if it has not already been discovered in the *Rhus;* for it could not be destroyed in any other way, than that which has been pointed out—a method which, from much personal observation in the District, we are persuaded is infallible.

Selections from American and Foreign Journals.

Poisoning by Arsenic. Meetings at the Faculty of Medicine in Paris.—We have seldom attended meetings of a more imposing nature than those recently held in Paris upon a most important question of medical jurisprudence, which has arisen out of the celebrated case of Lafarge, who was poisoned by his wife. The members of the Academies of Sciences and of Medicine, together with the élite of the practitioners resident in the French metropolis, had received invitations from M. Orfila, to witness the exposition of his methods of detecting poison by arsenic and antimonial salts: as also a demonstration of the successful mode of treating poisoned animals, by bleeding and diluent diuretics, after evacuating the poison from the primæ viæ.

Nine chemists, employed on the trial of the female culprit at the assizes of Tulle, had failed to detect arsenic in the organs of the poisoned man; M. Orfila, with Messrs. Bussy and Oliver d'Angers, who were subsequently consulted, succeeded in extracting the arsenic, which they exhibited to the court, in the form of metallic spots on porcelain capsules, and thus dissipated all doubt on the subject.

The chemists previously employed were men of eminence, theoretically acquainted with the mode of detecting arsenic, but not practically experienced in this delicate branch of chemical manipulation; and as thousands of medical practitioners would find themselves in the same predicament, to the great injury of the interests of justice, M. Orfila has rendered a great service to the cause of science, by publicly demonstrating the proper path to be pursued, more especially as he has carefully elucidated the errors likely to be committed, so as to produce failure.

Another question setted at these meetings, relates to the

suposed impurity of tests employed in detecting arsenic. It is quite obvious that if the zinc, sulphuric acid, and water employed in the process, themselves contain the metal, we cannot be certain of its existence in the organs submitted to experiment with those tests. All who know M. Orfila are aware of his extreme caution to ascertain the purity of his tests at the moment of using them. When the hydrogen gas has been produced from these substances, nothing can be more easy than to suffer Marsh's apparatus which contains them to work for a quarter of an hour; and if, during that period, the gas inflamed at its exit from a very fine pointed tube, bent at right angles from the bottle, deposits no arsenical spots on a porcelain capsule properly directed to its point, we may safely infer that it contains no portion of the metal in question; and if, at the expiration of that period, we add a portion of the suspected matter, prepared as hereinafter to be described, and the arsenical spots can then be made to appear on the capsule, the existence of the poison is fairly demonstrated.

A most absurd and calumnious insinuation has been circulated in relation to the case of Lafarge, that Orfila employed a nitrate of potash which might have been impure from admixture with arsenic. The learned dean, in answer to this, declares that he has examined two hundred different specimens of the commonest saltpetre of commerce, without ever finding them to contain a particle of arsenic.

The main object of the meetings was to demonstrate, by experiments on animals, 1, that arsenious acid and tartarized antimony, either introduced into the primæ viæ, or placed under the subcutaneous cellular tissue, are absorbed, mixed with the circulating fluid, and thus conveyed into all the organs of the animal body. 2. That they sojourn for a certain time in the visceaa and muscles, where their presence may be demonstrated by Marsh's apparatus for the production of hydrogen, which dissolves the metallic salt, and again deposits it on a cold surface by combustion of the gas with certain precautions; but that at a very early period after the ingestion of the poison, *a part* of what has been absorbed is eliminated by the urine, and consequently has abandoned the animal tissue. 3. That this elimination, which is much more rapid for the emetic tartar than the arsenious acid, continues for several days, until the tissues are completely freed of the poison. 4. That on this account it is *indispensable*, in the treatment of poisoning from these venomous substances, to promote the *secretion of urine*, and to abstract the deleterious

blood. 5. That, in the majority of cases, it is possible to distinguish whether the arsenious acid and the tartarized antimony, which are extracted from a dead body, had been administered during life, or by cadaveric imbibition after death—this last might occur in cases of poison being put into the stomach or rectum, of a person deceased, in order to raise a false accusation of poisoning against an innocent individual. 6. That the best mode of detecting minute portions of these mineral poisons, when absorbed into the organs, consists in destroying the greater part or the whole of the organic matters, by first drying them in a porcelain capsule over a fire, and then carbonizing them, either by concentrated azotic acid, or by deflagration with azote of potash; after which the residuum, if introduced into Marsh's apparatus, modified for the production of hydrogen gas, would come over as metallized gas, if the liquor should contain the metal. 7. That it is always easy to distinguish arsenic from antimony in the form of spots, when deposited from the metallized gas on the porcelain capsule; and that we may be assured these spots neither proceed from the tests employed, nor from the apparatus itself, by suffering the latter to work for a certain time before we add the suspected matter, and by previously making trial of the inflamed gas upon the porcelain capsule destined to receive the metallic precipitate, if any should exist. 8. That the *bones* of man and several animals contain an arsenical compound insoluble in water, and which differs from the arsenic absorbed by the organs. 9. That we may extract from human muscles a matter which M. Orfila considers to contain an *infinitely minute* proportion of arsenic, sulphur, and an organic substance; which compound differs essentially from the arsenical spots produced from the organs, or the urine, in case poisoning. 10. That we find in the earth of certain churchyards *infinitely minute* quantities of arsenic *insoluble in boiling water.* 11. Finally, that in legal medicine we may easily avoid any error which the presence of these minute portions of arsenic in bones, muscles, and the soil of churchyards, seems at first sight likely to produce.

The meetings for the above demonstrations were held on Oct. 25, 26, Nov. 1, 2. The experiments on the animals were performed at a preliminary meeting at ten o'clock in the following order; and the results were verified, and other collateral experiments were performed, at two.

First. The œsophagus was cut down upon in the neck of a dog, and tied; the ligature was to be cut away after twenty-eight hours, to show that the animal would eat and drink as

usual; from which we might infer, that in the poisoned dogs, with ligature on the œsophagus, to prevent the vomiting of the poison, the animal was not injured by the ligature. All this has been verified.

Second dog. The penis was tied, in order that its urine might be collected and compared with the same fluid in a poisoned dog.

Third dog. Hanged, in order that poison might be introduced into the stomach, and there left for eight days, to show that the adjacent organs would *imbibe* it from the stomach.

Fourth dog. Twelve grains of arsenic in solution were introduced into the stomach by a glass funnel, through an incision in the œsophagus. The dog was to die before two o'clock, the hour appointed for the second meeting, which was verified.

Fifth dog. Instead of arsenic a solution of twelve grains of tartarized antimony was poured into the stomach, as in the last case. Death, as in the last case.

Sixth dog. Three grains of arsenic were placed in the subcutaneous cellular tissue of the thigh. Death predicted, and realized in twenty-four hours.

Seventh dog. Tartarized antimony in the same dose (three grains) was put into the subcutaneous cellular tissue. Death in twenty-four hours, as in the former case.

In the last four animals the penis was tied, in order to preserve the urine; which fluid should be the first to be examined, either in case of suspected poison during life, or after death, whenever it can be obtained. To neglect this in either case would be a capital blunder. During life it may be the only matter within the reach of the practitioner that can be tested; after death it may happen that all the metallic poison has been eliminated from the organs, but may still be in the urine. The first thing, therefore, to be done in post mortem examinations of persons suspected to be poisoned, is to secure the urine, if the bladder should contain any; nay, in one of the experiments at the meeting of the 26th, on the dog poisoned by three grains of arsenic, which had been left for twenty-four hours in the subcutaneous cellular membrane of the thigh, no urine was found, and it could not have escaped from the urethra, in consequence of the penis having been tied; *yet the washing of the inner coat of the bladder detached a portion of arsenic from its surface*, and the liquor introduced into Marsh's apparatus deposited the metal in the usual way.

The urine of the healthy dog was found to contain no

arsenic. This and another experiment on the healthy liver was performed with the view of imposing silence upon cavillers who are seeking to obtain popularity as the patrons of criminals, by insinuating that *normal* arsenic is to be found in the human body, which, with certain limitation as to parts, is true; but is sufficient for medico-legal purposes to show that no normal arsenic is contained either in the liver or in the urine, because in case of poisoning we need not go beyond those parts for the detection of the absorbed metal.

Detection of Arsenic and Antimony in the Urine.—These metals, which are soluble in hydrogen, so as to form arsenicated or antimoniated hydrogen respectively, may be easily expected to precipitate in a metallic form, on the combustion of the gas which holds them in solution; but that precipitation would be lost, unless the point of the gaseous flame were directed, *secundem artem*, on some *cold* surface capable of receiving the deposit, and the necessity of its being a cold surface, such as a white porcelain capsule, arises, as the case of arsenic, from the volatility of that metal by heat. The experiment, therefore, might be defeated, by using so large a flame as to heat the surface; to prevent this, the point of the tube from which it emanates must be so fine, as to allow a flame not larger than about one-sixth of an inch in length; the suspected urine is to be put into Marsh's bottle with zinc, sulphuric acid and water, for the production of hydrogen; if it contain arsenic, the inflamed gas, at the point of a tube inserted into the cork of the bottle, and bent nearly at right angles, will deposit the metal on the porcelain capsule in the form of yellowish brilliant spots, soluble in nitric acid; the dried salt thus produced being convertible into red arsenate of silver by nitrate of silver, if a sufficient quantity of nitric acid had been used; the arsenical spots may be further distinguished from the antimonial by its volatility at the flame-point of pure hydrogen, to say nothing of the difference of aspect which should be learned by actual experiment.

The detection of antimony in urine cannot be effected without evaporating the liquid to dryness, and carbonizing the residuum by boiling in azotic acid, or deflagrating with saltpetre; which latter, it may be remarked, cannot be depended upon for the carbonization of arsenical urine, inasmuch as that metal might be volatilized by the intensity of the deflagration.

After the carbonization of the residuum of antimonial urine, the tartaric acid, which forms the salt of the contained metal, has been decomposd, and the antimony is left in a form

insoluble in water, until a portion of chlorhydric acid be added. In this state the coal is to be boiled for two or three hours in distilled water, the decoction is put into the hydrogen bottle, with zinc and diluted sulphuric acid, and the spots of antimony are speedily precipitated on the porcelain capsule from the inflamed metallized gas.

In treating urine, the operator is liable to be incommoded by froth and albuminous matter floating upon the liquor within the apparatus. To remove this inconvenience when it occurs, let the whole be put into a glass funnel, until the frothy matter be settled on the surface; in which case the clear liquor can be easily separated, and returned into the apparatus.

It will be observed, that the arsenical and antimonial spots are both soluble in nitric acid, and differ little in appearance until after the application of heat, which, by supplying an additional dose of oxygen, converts the arsenious acid into arsenic acid; and this, again, can be decomposed by nitrate of silver, forming the arseniate of silver of a brick-dust color. No such change is produced in the antimonial salt; and it may be well to state, that the spots produced from the *normal* arsenic of muscular fibres differ in color from the *absorbed* arsenic in poisoning. The normal spots are an *opaque white, insoluble in cold nitric acid*, but soluble in the *boiling* acid. They are not convertible into arseniate of silver of a brick-dust color by *neutral* nitate of silver, after their solution in *boiling* nitric acid has been evaporated to dryness by heat, and they are volatile.

In order to show these spots of *normal* arsenic, which M. Orfila remarks are in *infinitely minute* proportion, the learned professor boiled a quantity of human flesh in distilled water, with potash, for five hours; the decoction strained and evaporated to dryness, was carbonized by azotic acid. It was then boiled for half an hour in distilled water, and put into the apparatus in presence of the assembly. In a few minutes the opaque white spots were received on a porcelain plate, and handed round the amphitheatre.

To contrast the *normal* arsenic with that produced in the human flesh by absorption from the stomach, a porcelain capsule was also exhibited with numerous arsenical spots, collected from the arm of the assassin Soufflot, who poisoned himself on receiving sentence of death.

M. Orfila has made repeated experiments on the urine of patients who had taken emetic tartar for inflammation of the lungs. The antimony in such cases can always be detected

by Marsh's apparatus. The spots produced are not easily volatized; and the nitrate of antimony formed by dissolving the spot in nitric acid, and evaporated to dryness by heat, is not reddened by nitrate of silver, like arsenic.

Detection of Arsenic in the Liver of one of the poisoned Dogs.—The dog poisoned by twelve grains of arsenic in solution poured into the stomach, the œsophagus having been tied to prevent vomiting, was in *articulo mortis* at the expiration of four hours. His liver was taken out, and M. Orfila directed attention to the fact, that the stomach and intestines had not been perforated so as to give issue to the poison. If, therefore, arsenic was found in the liver, its presence could only be accounted for by absorption in the regular way, through the circulation. One fourth of the liver was cut into minute portions, and dried in a porcelain capsule over a charcoal fire, then carbonized by nitric acid, and boiled in distilled water. The decanted liquor was put into the hydrogen bottle, and in a few seconds the spots were deposited on the porcelain capsule.

The liver of the healthy dog treated in the same manner gave no trace of arsenic; and, as this result has been constantly witnessed, it may be inferred that the healthy liver contains no *normal* arsenic, although the metal in a modified form has been found in the human flesh and bones.

One of the experiments made upon three-fourths of the liver of the poisoned dog, produced fewer arsenical spots than that upon the fourth. This was owing to the carbonization having been effected by deflagration with nitrate of potash, which, from the intensity of its flame, had volatilized a portion of the metal. The nitrate of potash, therefore, is only to be adopted when the carbonization cannot be completed by azotic acid, in consequence of the parts having been more or less converted into *adipocire*, or, as M. Orfila says, saponified.

A caviller has publicly affirmed that arsenic may be developed in the soft parts by putrefaction, although it might not exist, or be discoverable, in the normal state. A paper was, therefore, addressed to M. Orfila, by one of the academicians, requesting that an experiment might be made on a putrid liver, in order to settle this question. At the meeting of Nov. 1, M. Orfila had provided a liver, which had been in the dissecting room of the faculty for twelve days, and was in an advanced state of putrefaction on the day of meeting. In order to afford a greater chance of collecting the arsenic, if any should exist, it was resolved to carbonize the whole of

the liver, instead of taking the dried residuum of its decoction, as in the former experiment on the sound liver. The whole was, therefore, carbonized by nitric acid in the presence of the commission of the Academy of Sciences; which was not effected without much difficulty, in consequence of the change undergone by putrefaction. The mass was then boiled in distilled water, and the decoction was placed in Marsh's apparatus, in the presence of the audience. Not an atom of arsenic could be traced. M. Lepelletier, as one of the commission of the Academy, tried his hand in directing the flame of the hydrogen upon the porcelain plate; but nothing was procuced, excepting *a nnmber of white spots, which are furnished by animal matter.* As this experiment is not a solitary one, Mr. Orfila, maintains that *normal arsenic is not to be found in the liver, whether it be putrid or fresh.*

When the person poisoned by arsenic has taken emetic tartar for the purpose of producing vomiting, the blood, the organs and the urine will contain both the metals, which may be reproduced by Marsh's apparatus. The aspect of the mixed metals will vary according to the proportions in which they respectively exist. In order to illustrate this, M. Orfila exhibited the results of different proportions of the respective metallic solutions on a porcelain plate; from two drops of a concentrated solution of emetic tartar for instance, to two of arsenic, then 2 to 3, 2 to 4, &c., the arsenic being the increasing substance. Another series was formed out of larger quantities, beginning with 9 grains of arsenic to 9 of emetic tartar, then 9 to 10, 9 to 11, &c., the ascending series being the antimonial salt.—*Lancet. Boston Med. and Sur. Jour., Jan.* 13, 1841.

THE WESTERN JOURNAL.

Vol. III.—No. III.

LOUISVILLE, MARCH 1, 1841.

CONNECTICUT RETREAT FOR THE INSANE.

We have received from Dr. Brigham a copy of the Report of the Directors of this noble institution for 1840, and seldom have we contemplated the details of a paper with the same satisfaction. From a table exhibiting the number of admissions, recoveries, and deaths, annually, during a period of fifteen years, the proportion of cures, including old and confirmed, as well as recent cases, is shown to be more than fifty per cent. The total number of admissions being 1,001, the total number of recoveries was 563. But of the 537 recent cases admitted, 451 were cured. To the humanity, judgment and skill of the officers of the Retreat no words could testify with the force of these figures. They speak a language cheering to the heart of every physician and philanthropist. Yet, it is but sixteen years since, it is stated in the Report, that the proposition to establish an institution, which has proved itself thus capable of relieving human anguish in one of its most dreadful forms, was coldly received. By some the utility of the scheme was questioned, and by others its necessity was denied. For sixteen years it has been restoring to reason and to society more than half of all the insane committed to its charge; and of those in whom the disease has not become inveterate by time and bad management, more than four-fifths. The process by which results, so unlike those of lunatic asy-

lums under the old *regime*, have been brought about, is described in the following paragraphs:

"It has been a cardinal principle with the Directors from the first establishment of the Retreat, to provide with parental interest for the wants of its unfortunate inmates. They have aimed to place it in charge of men distinguished for their skill, humanity and integrity, and require of them the unceasing exercise of these virtues.

"The physician is nominated by a committee of the Medical Society, and approved by the Directors. He is the head of the institution—is responsible for its management—conducts the medical and moral treatment of the patients, and maintains a regular correspondence with their friends.

"The importance of religious instruction as part of the system of moral treatment of the insane, has not been overlooked. Those of the patients who are capable of joining in religious services, assemble every evening, when the chaplain reads a portion of the sacred scriptures and conducts the devotions of the family. On Sunday he preaches to the assembled household, and often, during the week, presents the truths of christianity and its consolation to those who are care-worn, anxious, and dejected. Much good has resulted from this practice, and much credit is due to the gentleman, who has, with uncommon discretion and sound judgment, performed this sacred duty.

"A steward is appointed to make provision for the wants of the institution and of the patients, with the advice of the physician, and to perform whatever duties are appropriate to his station. It is his business also, under the direction of the superintendent and managers, to see that the buildings are kept in good repair—that the grounds are well cultivated, and that the quarterly dues for the board of the patients are collected. He is required, every month, to render to one of the Managers, a detailed statement of his receipts and expenditures.

"The matron of the institution has usually been the wife of the steward. She is required to devote much time to the female patients and their attendants—to see that the former are furnished with whatever is necessary for their comfort, and that the latter are faithful and kind in the performance of their duties. The matron has also been required to superintend the domestic concerns of the household, and to see that the rooms, the beds, the clothing, and the food of the pdtients are never neglected. These multiplied duties were too much for one person to perform, and it was consequently determined to appoint a house-keeper, to take charge of the domestic concerns of the institution, and require the matron to devote her attention exclusively to the welfare of the female patients.

"The early patrons of the Retreat were especially anxious to guard against every possible abuse. They directed that a committee of medical men should be chosen every year, authorized to visit dhe institution, to inspect its records, and inquire into its usuages, with instructions, if they discovered any thing wrong, to report it. It is the business of this committee to visit the Retreat every month—to assure themselves that is well conducted—that the patients are treated with uniform kindness, and that no reasonable exertions are spared to promote their recovery. A committee of ladies is annually appointed, whose attention is mainly directed to the condition of the female patients. Their visits

are always welcome, and their suggestions have been the source of important practical improvements.

"It has always been our endeavor to make the Retreat an eligible place of residence—to allow the patients every liberty consistent with their safety, and to subject them to no severe restraint. But in order to secure this desirable object, it is necessary to be provided with a competent number of attendants, who, by assiduity and vigilance, shall supply the place of bolts and keys It is their business to walk or ride with the patients—to engage with them in their various schemes of recreation, and, if possible, to induce them to engage in some useful employment. The expense of supporting patients is materially increased by the plan to which we have alluded, but when it is remembered that it is attended with greater success—that it is more humane and more in accordance with the practice of the best asylums in the country, it will be admitted that no other, at least no better course could be adopted."

Dr. Brigham, well known for his professional industry and attainments, and especially prized at home for his umblemished moral character, has lately been elected superintendent of the institution. We feel assured, with the Directors, that his duties will be ably and faithfully performed—that his exertions will be crowed with success—and that he will be an instrument of great good to the insane, and of extending the fame and usefulness of the Retreat. Y.

DR. M'CLINTOCK'S INTRODUCTORY LECTURE.

This lecture was delivered by Dr. M'Clintock in November last, at the opening of the winter course in the Philadelphia School of Anatomy, of which, we believe, he is the founder. In matter and manner the lecture is excellent. It treats in a sufficiently fervid style of the advantages of anatomical knowledge, but it contains not a word on that subject, the truth of which every scientific physician would not hastily subscribe. The following passages are specimens of the lecture, and convey useful truths to the younger members of the profession:

"Twenty-three hundred years ago, flourished HIPPOCRATES, the Father of Medical Science, who, like Homer and Raphael, in their respective arts, not only created this science, but brought it to a high degree of perfection, by the impulsive force of his genius and the unwearied energy of his research. So accurate were his experiments and so profound his observations, that he unfolded the history of acute diseases with so much clearness and precision, that twenty centuries have hardly detracted from the value, or added to the amount of his researches. But he far from attaining the same degree of perfection in Surgery. And why? Because the circumstances with which he was surrounded—the prejudices of an ignorant and superstitious people, and their religious

veneration for the asylum of the departed—by depriving him of the opportunity of dissecting the human body, raised up insurmountable obstacles to the proper study of Anatomy; and his knowledge of the subject founded chiefly upon the external appearance of the body, and on the examination of the structure of those animals which were supposed to approach nearest to man, was necessarily limited and imperfect. In the study of acute diseases, commonly occurring, which presented strongly marked symptoms, and only required a just and sagacious observation of their succession and relations to each other, in order to the formation of a correct history of them, these imperfect notions were sufficient; but in surgery, the want of anatomy is immediately felt, and the consequence was that the science, even in the hands of so great a master, made little or no improvement. And it remained in its infancy, for nineteen hundred years longer, until, in the beginning of the 16th century, the genius and boldness of Vesalius gave new life to anatomy. The darkness that had so long hung over surgery was seen pierced by the new and brilliant light which the advancement of anatomy diffused over all branches of medicine, and under the illuminating power of this clear and certain flame, the art soon assumed a new aspect, and suddenly rose to a high pitch of perfection, in the hands of Ambrose Paré, the distinguished surgeon of Charles IX, whose great and well deserved reputation saved his life, in the memorable night of the massacre of St. Bartholomew. To this day, the countrymen of Paré claim for him the same high place among surgeons, that is assigned to Hippocrates among physicians. And among all the great names that adorn the history of Surgery in later times, the Petitis, the Desaults, the Le Drans, the Munrons, the Hunters, the Coopers and the Physicks,—you will not find one, the foundation of whose high renown was not deeply laid in the study of anatomy; here they prepared themselves for those successful operations which made them the admiration and wonder of their own times, and for those brilliant discoveries and inventions which have transmitted their glory undiminished to ours—nay, which shall crown every one of these names with the immortal reward of an imperishable fame.

"There is no quality more indispensable to the surgeon than that undisturbed coolness of mind which cannot exist without a strong and just confidence in his own powers, and in his preparation for the arduous task before him, when he is called upon to perform some important operation. This just self-confidence is essential to every pursuit in life. To quote the language of Bulwer, "if you rob Genius of its confidence, you clip the wings of the eagle." No great enterprise in the walks of science, literature, art or business, has ever been accomplished without it; it nerves the arm of the warrior, it gives energy and power to the decisions of the statesman, and it enables the scholar to struggle on, through years of unceasing labor, with full hope of the final reward of all his toils. But to the surgeon of all other men, is this calm confidence and self-reliance is indispensable. He is called to the side of a wounded man—life is fast ebbing away—his judgment must be almost as rapid as his eyesight, and his action must follow, as rapidly, the decisions of his judgment, or the patient will die in his hands. Now, under such circumstances, a man must either be thoroughly ignorant of anatomy, or fully learned in it, in order to have confidence in himself.

"But your attention should also be carefully directed to the necessity of examining the dead, for the purpose of ascertaining the seat and the effects of disease. It is very true that a great proportion of your

practical skill in detecting the character of disease is to be obtained by patient investigation at the bed-side of the sick; but it is equally true, that without much time and labor bestowed on cadaveric inspection, you can never have that quick perception of the nature of internal maladies, that ready apprehension of the immediate seat of the disease, and that almost intuitive perception of the hidden workings of the morbific agency in the system, which ought to be exhibited by every feeble and inadequate ideas upon these subjects, and he who trusts to them, and refuses to store his mind with the results of accurate observation obtained in post mortem examinations, will always find his views of disease unsatisfactory to himself and his consequent practice doubtful and uncertain. And your desire to witness and take part in cadaveric inspections, should not be confined to those cases in which death has been the result of rare and singular diseases, but should be extended to those which may be regared as even of ordinary occnrrence. To quote the appropriate language of M. Hodgkin, "it is only by this practice that the student can learn to distinguish the almost endless varieties of aspect which parts and organs assume, and to avoid confounding three things essentially distinct,—healthy, diseased, and cadaveric appearances; and to him who is engaged in practice, it is no less necessary, in order to keep up his knowledge, and to rectify, confirm, and improve his diagnosis."

"To the members of the class, I will say, you will be expected to acquire most of your knowledge here obtained, from actual dissections made with your own hands. This is the *only* way in which you can become expert practical anatomists; you may listen to lecture after lecture, you may read volume after volume, but if you do not unite with your hearing and reading, actual dissections of yonr own, your acquisitions will neither be accurate, solid or permanent. Accordingly, our rooms here are "dissecting rooms" rather than "lecture rooms." A school in which you can study for yourselves, as well as be instructed by another: the dead subject, in addition to the voice of the living instructor, is to reveal to you the secrets of anatomy." Y.

PROFESSOR GROSS.

As our Journal is in the interest of the MEDICAL INSTITUTE OF LOUISVILLE, though not aggressive on other schools, we may be allowed, at the end of the first course of lectures by a new professor, to speak of his labors. It is generally known to our readers, that the chair of SURGERY in the Institute became vacant last summer, and was filled by Dr. Gross, late professor of Pathological Anatomy in the Cincinnati College. Having never taught surgery publicly till he entered on his duties in the Institute, all who feel an interest in its character must desire to know in what manner the new professor has acquitted himself. In stating this, we hope to avoid even the *appearance* of exaggeration, and shall, therefore, limit ourselves to the enunciation, that our pupils, without a single exception known to us, are fully, and indeed, eminently satisfied,

both with his lectures and operations. The former have been from beginning to end, extempore; and always delivered with great fluency and precision: the latter have been numerous, diversified and instructive, both on the dead and living subject. Among those on the living, we may mention as the more important, the operation for *Club-foot*, by dividing the tendo achilles; that for *Strabismus*, or squinting, performed eight times within the last month; the operation for *Cataract; Lithotomy*, in which a large calculus was extracted from a boy, nine years old, now restored; tying up the *sub-clavian artery*, for a large and threatening *axillary aneurism*, the patient nearly well; lastly, the extirpation of a tumour, of sixteen years growth, and nearly the size of an orange, seated in the front of the os hyoides, in a young lady, who is recovering. Most of these operations, with many others of a minor character, were performed in presence of the class; either in the amphitheatre of the Institute, or the new clinical and surgical hall of the Louisville Hospital.

We are happy to say, that Professor Gross is now in the act of removing to Louisville, having made his conditional acceptannce permanent; and that he intends henceforth to devote himself to the practice of Surgery. He will also, hereafter, be a regular contributor to the surgical department of our Journal, which will, indeed, be placed under his special superintendence.

OPERATION FOR STRABISMUS.

This operation was performed at Little Rock, in Arkansas, in January last, as will be seen by the following extract from a newspaper of that place:

"*Novel Surgical Operation.*—Dr. W. J. Goulding of this city, a few days since applied the novel operation of tenotomy to the cure of squinting. The subject was Mr. Isaac M. McCurdy, aged 24 years. His left eye, from early infancy, had been drawn upwards and inwards towards the inner canthus, by the contraction of the internal straight muscle of the eyeball. The eye was relieved from this distortion by retracting the eye-lids and making a small incision of the conjunctiva or outer membrane, near the inner angle of the eye, so as to expose the insertion of the contracted muscle, under which a small probe was introduced and the fibres divided with a pair of small scissors. The eye instantly resumed its normal position, and now acts with the other in all its motions."

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APRIL, 1841.

ART. I.—*A Memoir on Obliteration of the Bronchiæ: By* A. C. REYNAUD, M. D., formerly resident in the Hospital; late Chief of Clinical Medicine of the Paris Faculty; Physician at Puy, &c. Translated for the Western Journal of Medicine and Surgery: By JOHN A. WARDER, M. D., of Cincinnati.

I HAVE been induced by the Academy's flattering notice of my last work, to present this Essay, upon a subject that has not been heretofore discussed. The work is purely anatomical; this lesion of the lungs has no symptom to reveal it during life, nor are its causes suspected. My only object has been to fill up a hiatus in the anatomical history of thoracic affections. We cannot expect to make any great discoveries in this field of pathology which has been trodden by very distinguished men, and patience is requisite to collect the few facts that have escaped their learned researches.

Some persons may object that I have not indicated the order of frequency, in which the alterations were presented

in a given number of subjects: this was prevented by the difficulty of making the thorough post-mortem examinations, necessary to assure us of the existence or absence of a lesion that does not always attract attention at first sight, and which, being sometimes confined to a single bronchial branch, could only be discovered by the expenditure of much time and patience in the examination.

It may be affirmed that this lesion is far from being rare, and a careful examination will frequently reveal it in many subjects; this fact should induce pathologists to direct their researches to this fruitful topic.

Three species of bronchial obliteration have been observed. The first, arising from external causes, as tumours, in their neighborhood or on their circumference, producing their complete occlusion; in the latter the same causes operated within their cavity, and their obliteration sometimes depended on their substance being converted into a solid band, or upon a complete coarctation of their walls at some distance from the origin of the bronchiæ.

Before entering upon the subject, it will be necessary to a proper understanding of the facts to be stated, that we should be familiar with the arrangement of the bronchiæ, with their divisions and terminations in the parenchyma of the organ. The delicate anatomy of the lung is so easily examined, that all questions relating to its structure may be readily settled; therefore the discrepancy of the opinions among anatomists should not exist.

All are agreed as to the arrangement of the bronchiæ and their main branches, so far as they are reached by our instruments in an ordinary examination. We find them every where forming a system of continuous tubes, sometimes branching in pairs, sometimes irregularly, small twigs often

springing from larger branches, and soon lost in the neighboring parenchyma. These channels are independent of one another, having no anastomoses like the blood vessels—but the difficulty exists at the ends of the bronchiæ, where they penetrate the pulmonary lobules: some anatomists contending that the smaller bronchiæ here lose their existence as branched tubes, and terminate in a peculiar spongy tissue in which all the cellules communicate with each other. This was the opinion of Helvetius and Haller, and is supported by many anatomists of our own day. Malpighi, in a letter to Bartholin, proved that such was not their mode of distribution; on the contrary, that they all successively branch again and again, and terminate in an infinitude of separate cul-de-sacs. Reisseissen, in a memoir *ex professo*,* gave satisfactory demonstration of the facts advanced by Malpighi, adding to the proofs given by the illustrious Italian, a mass of evidence which should remove all doubts upon the subject. This opinion respecting the pulmonary structure has been adopted by Andral in his pathological anatomy. Few have repeated the experiments of Reisseissen; some are content to take his word for the results, while others reject facts which an attentive examination would have proved.

I have repeated most of the experiments of the Alsacian anatomist, and have arrived at the same conclusions: as the recital of my testimony may have some weight, I shall now relate the result of my observations.

1st. I have often examined the lungs of the fœtus that had not breathed: injecting them with mercury, I distinctly saw one of the thin lobules on the edge of the inferior lobe penetrated by a very small bronchia, which was successively

* *De Fabrica pulmonum*, cum tabulæ VI. Berlin, 1822.

divided and subdivided many times. These divisions became shorter and of smaller calibre, and finished by becoming crimped as if they had given rise to a number of little culde-sacs, and finally terminated by an enlargement—then the mercury presented the form of a tree, whose terminal ramifications did not communicate laterally—this was demonstrated by the fact that the portions of fluid did not mix, even when pressed together. If the mercury was pushed into one of these little bronchiæ, with the finger, the ramifications might be seen in their forming stage—that the passages really pre-existed, was proved by the reflux of the liquid when the pressure was removed, and its return to the same point and in the same form when it was renewed. When the metal reached the extreme limits of the tubes, a firm pressure would neither make it advance, nor even confound the little terminal globules whose form and position remained unalterable.

2d. In the lungs of adults or of animals, in which the pulmonary vesicles or last bronchial terminations have a much greater capacity than in the fœtus, I was able to recognize the same arrangement, without any injection or preparation, by unaided vision. A thin piece from the anterior border of a monkey's lung, which was inflated and dried on glass, clearly presented the arrangement I have described.

We cannot see this so well in the fresh human lung, because the terminations of the bronchiæ are perpendicular to the pleura, so that we can only perceive a mass of vesicles and not the bronchial trunks that supply them: still, in the examination of a number of lungs I have found many that, on some points of their surface, presented a remarkable arrangement, which enabled me to observe through the pleura, the track of one or more bronchial ramifications some dis-

All will admit the importance of noting this elementary degree of the affection, since it is from a union of these pathological elements that the more complex and extended alterations result, which alone are appreciable in the ordinary autopsy. Let us first speak of the obliteration of the air passages, at some distance from their terminations, because the modifications of structure, which this species of occlusion brings on, sometimes enables us to observe with the greatest precision, the analogous modifications that simultaneously occur in the vesicles themselves. This obliteration has been seen in all points of the bronchial ramifications.

1*st Fact.* In the lung of a phthisical patient who had died suddenly with an alarming hæmoptisis, I found many lobules on the surface of one of the lungs, so arranged that instead of the terminal branches being perpendicular to the pleura, they were obliquely turned, so that they could be traced four or five lines, through this transparent membrane: their arrangement was precisely that already described. On one of these lobules a little trunk was obliterated, the air in the permeable portion could not be made to advance, though pressed with the handle of the scalpel, and the tube was found degenerated into a small, solid cord or band, of a white fibrous texture which, after dividing two or three times, terminated in the pleura, at the limits of the lobule.

Art. II.

We have frequently seen a second species, seated in the fifth or sixth order of branches, consequently very near the bronchial terminations though some lines from the pleura, within the lungs. To discover this lesion it was necessary to cut the organ; following the bronchium with care, we met

with a sort of cul-de-sac, that was readily recognized as an abnormal termination, for the tube was large enough to furnish secondary divisions: beyond the obliteration, we found it converted into a thin, firm, resisting cord, furnishing fine ramifications, and easily isolated by a slight scratch from the rest of the pulmonary tissue. It could be thus traced to the pleura, where it became capillary: the length of cord indicated the distance of the obliteration from the periphery of the organ.

Art. III.

In a third species, also frequently observed, the obliteration was seated at about the same distance from the pleura; but while the first was only recognized by careful sections with a pair of fine scissors, this was readily ascertained by a common blunt probe, which, when introduced into the principal bronchia, was suddenly stopped at a certain point in one of the branches; by cutting down we found this was owing to an obliteration in a tube of large calibre, which, although near the surface of the lung, did not show the peculiar characters of dilatation. Here the tube was converted into a larger band than in the preceding case, though not longer to the pleura; here was another peculiarity, which indeed pointed it out, the surface of the lung, at the corresponding part, was puckered; whence it was natural to conclude that the retreat of the pulmonary tissue at this point, made the obliteration seem nearer the pleura, and the band of continuation shorter than they would otherwise have done.

The first deduction to be drawn from these facts, is that we cannot decide upon the point of obliteration by the length of the *cord of continuation* alone, but that we must at the same

tance from their terminations. From some unknown cause, these branches, being longer than the others, did not terminate at the pleura, but ran along beneath it for two, three and even five lines. Then the air, like the mercury in the other experiment, could be seen preserving a regular aborescence to its ultimate limits.

3d. To these facts, corroborating the correctness of the views of Malpighi and Reisseissen, (which I have embraced,) I shall add another proof deduced from simple dissection: the manipulation is difficult because of the exceeding delicacy of the tissue, but drying confounds the parts and occludes those smaller cavities whose consistence is insufficient to keep them open. With very sharp scissors, and by frequent insufflation of the tube, I have been able to follow it to within four or five lines of the periphery of the lung. Insufflation then showed that the bronchia continued further without losing its character of a regular canal; a bristle introduced served as a conductor, and the tube could be incised to within two lines of the pleura, and the internal surface was found to be continuous, smooth and with small openings into the lesser bronchial ramifications. To complete the section, it was necessary to perforate the pleura with the bristle, or rather, to make a counter opening at the point where it terminated; then uniting the extremities, so as to form a ring, a little pulling enabled me to push one point of the scissors a little further into the bronchial cavity and complete the section. This, then, showed the smooth aspect belonging to the rest of the passage, within two lines of its termination; it appeared cribriform from a number of minute openings, that lead to the final ramifications.

Lænnec, who has written so admirably on the pathological anatomy of the lungs, avows that he could form no opinion

respecting their ultimate structure, pathological facts not having furnished him with any data to decide the question. If permitted to have access to such a source, I could find new arguments to demonstrate my premises, in the dilatation of the bronchiæ, which frequently extends to their very terminations without other alteration of their normal arrangement. But I believe enough has been already urged, as the work is not intended to elucidate this question of structure; what I have said will explain many important anatomical peculiarities that occur in the course of the Memoir, pathological facts coming in to corroborate an opinion which is founded upon observations made on the healthy tissue.

Having mentioned the three principal forms, I shall commence with that which results from the coarctation of the bronchial walls, without their containing any foreign matter, and without the agency of any external pressure, because, this has been most frequently observed, and constitutes the species of obliteration least likely to be prognosticated, considering the mucous character of the membrane that lines the air passages.

Art. I.—*First kind of Obliteration.*

The most simple or elementary form is the closure of the vesicle itself, or the cul-de-sacs in which the bronchiæ terminate. This lesion, to which many affections of the lungs may relate, exists not only in a general form, so that masses of the vesicular parenchyma of the organ become solid, compact and impermeable to the air, but it may be found isolated, in one or more vesicles. This alteration can be readily detected by those accustomed to minute researches in practical anatomy.

time consider the calibre of the obliterated bronchia, the size of the band, and the state of the pulmonary surface at the corresponding point. It may be readily conceived how the obliteration of a bronchia inducing that of its branches, would result in the wasting of the pulmonary tissue, and more or less puckering of the surface of the organ at the corresponding point.

I have also observed these changes in the ramifications of the internal lobules towards the centre of the organ, for the bronchiæ terminate at all distances, and small ramifications often arise from the great branches. Here, as above, I have always been able to trace the fibrinous band from the point of obliteration.

Art. IV.

A fourth and last species of obliteration is that which we have observed in larger bronchial trunks than the preceding, in those destined to furnish branches to considerable portions of the lung. I have had twenty cases of this kind, which does not essentially differ from those we have been considering, but we shall examine it separately, because of the large number of bronchiæ obliterated by this lesion, and the peculiar forms of structure to which it gives rise.

It has been observed at all points in the bronchial tree, from the branches which first spring from the main tube, to those, which in an ordinary examination, are readily dissected with the common armed scissors. The bronchiæ were found to terminate in slender cul-de-sacs, at variable distances from the point where they would have ended naturally; the cavity could never be traced beyond this interruption, and externally they could be seen in the form of a solid, fibrinous,

conical band, which could be followed by some of its divisions nearly to the surface of the lung, or even to the pleura itself, whatever might have been the distance of the obliteration from the periphery. Sometimes these fibrinous bands were regularly divided and subdivided, like the bronchiæ, sometimes a single conical cord extended from the obliteration to the surface, while from its sides more slender secondary filaments arose, which were divided as usual. It should be here remarked, that within the organ a number of little, short and curved prolongations were given off laterally from these filaments, and terminated like the others. Pathological and healthy anatomy are constantly accessory to each other; without the first, many structural arrangements that are rendered apparent by disease, would perhaps have forever remained obscure; on the other hand, a precise knowledge of the healthy structure of the parts can alone prepare us for a right apprehension of many organic alterations. Hence the necessity will be admitted of our establishing the real anatomical arrangement of the bronchiæ, how their numerous branches spring from one another, and how they terminate, since, without this knowledge, the existence of the filaments, extending to the pleura from the tube, would have been wholly inexplicable; it appears plain to us that these bands are nothing more than obliterated bronchiæ, whatever may have been the seat or the cause of the lesion. So, on the contrary, this pathological fact fully confirms what has been asserted respecting the distribution of the bronchial tubes and their mode of termination, whether in the substance or periphery of the lung. Nature here presents us a most beautiful anatomical preparation, which is not subject to the imperfections of our handiwork.

Of the seat of Bronchial Obliterations.

This lesion is most frequently found at the summit of the superior lobe: we have found it but twice in the inferior lobe, though our attention has been more especially directed to the former position, because our researches in the latter have been almost always fruitless.

Condition of the Obliterated Bronchiæ.

So far as permeable to the air, we have generally found them perfectly sound, both in the structure of their walls and in their dimensions. Some dilatation was occasionally observed in different parts of the apparatus, but this was most frequently found when the obliteration occurred near the origin of the large trunks: we have never seen it more marked than in a patient whose right lung presented cavities as large as a nut, resulting from dilated bronchiæ, that had been abruptly obliterated about an inch and a half from their origin. In this and analogous cases we found the peculiar characters of dilated bronchiæ.

The membranes offered nothing worthy of remark, the mucous coat was sometimes red, participating in the state of injection that existed in other parts of the organ, sometimes was colorless or rosy, as in the healthy state: once, in a phthisical female, in whom many bronchiæ of the inferior lobe were obliterated near the centre of their course, the walls were a little thickened near the obliteration, while their internal surface was red and covered with a slight exudation of lymph. In a second case they were exceedingly thinned, transparent, and entirely destitute of cartilage for the extent

of half an inch near an obliteration in a bronchia of the third order. The subject was a female, affected with cancer of the uterus, and much emaciated. The lungs were pale, discolored, very light, and presented in many places little masses that were both tuberculous and cancerous, and at the same time there was a remarkable rarefaction at their summit.

State of the neighboring Bronchiæ and Pulmonary Tissue.

We have frequently seen a remarkable dilatation in the bronchiæ near those obliterated: thus, in a case where the lesion was four lines from the summit of a branch, a collateral tube, which up to this point had preserved its natural proportions, was here dilated so as to acquire an unusual size, this continued to a hardened impermeable, blackish mass, a line in thickness, which was at the summit of the lung and entirely beneath the pleura.

We have also seen the dilatation commencing much nearer the root of the bronchia than the obliteration in the collateral branch, but it should be stated, that in this case, most of the superior lobe, in which the observations were made, was occupied by a tubercular cavern, and this may have exerted great influence in producing the dilatation.

It frequently happens that the parenchyma becomes emphysematous, or even rarified in the neighborhood of the obliteration, without any remarkable dilatation of the trunks that supplied the part. On the contrary, we have sometimes seen the pulmonary tissue in an opposite condition, which seemed attributable to the dilatation below the point obliterated. We have also found cavities impermeable to the air, in the posterior inferior portion of the upper lobe: this was observed, but in a less marked degree, in the neighborhood of

a final ramification that had been first dilated; many branches springing below the interrupted part, were found united to the sac of dilation and thus obliterated.

[*To be concluded in the next Number.*]

ART. II.—*A Case of Triplets.* By A. H. BUCHANAN, M. D., of Columbia, Tennessee.

IN the month of September last, I was consulted by Wm. E. Ervin, Esq., concerning Mrs. E., who, he said, was very large and suffered much from pain and swelling of the lower extremities; he also expressed the fear that she was pregnant with twins from her unusual size, &c. Laxatives, light diet and rest were recommended. From this time until the 20th of October, I was occasionally consulted about her situation in consequence of more or less pain in the back, abdomen and lower extremities.

On the 24th of October a slight hæmorrhage took place from the uterus, and I was requested to visit her; on my arrival the slight hæmorrhage and pain which accompanied it had ceased, and I returned home, (distance three miles,) after advising him of the fact, however, that the position of the placenta over the mouth of the womb might probably be the cause of the sanguineous discharge, and should it return to inform me immediately. On the next morning, the uterine pain and hæmorrhage having returned, I again visited her; but as the discharge had ceased before my arrival, and the pains were very irregular and inefficient, I again left her and returned in the evening to remain with her during the night.

She passed a very restless night, suffering more or less from pain and mental anxiety, and often observing that something unusual was the matter with her. On the next morning, the pains becoming more urgent, I examined her per vaginam and found the mouth of the womb widely dilated, and the head of a child low in the pelvis; the membranes though not tense were ruptured, and, in a very few minutes, she gave birth to a fine, large boy, weighing something upwards of seven pounds. The size of this child induced me to believe that there were no more to follow, and I waited about ten minutes for the placenta, but finding the mother very languid and becoming pale, I endeavored to ascertain the condition of the womb; and upon examination found her flooding freely, and the mouth of the womb above the reach of the finger. The hand was now applied upon the abdomen, which felt as large and hard as if she had not given birth to a child. By this time she had become extremely pale and almost faint and pulseless. Brandy toddy and laudanum were ordered to be given freely and frequently. The hand was now introduced into the womb, the mouth of which was slightly contracted about a portion of the placenta which was hanging through its lips; the hand in passing into the womb first came in contact with a head, a hand and a foot, which somewhat puzzled me, for I had no thought of there being two more children. I endeavored to rupture the membranes which was somewhat difficult to accomplish, both on account of their strength and the small amount of liquor amnii they contained, rendering them loose and flabby about the child; having succeeded, however, the foot was seized and brought down to the vulva, where it was retained by a fillet of tape; the left hand was now introduced and the other foot brought down, and I was

also fully satisfied of the existence of a third child. The child whose feet were down was delivered without much assistance from the womb, although I endeavored to excite contraction by external friction, &c., &c. The feet of the third child were now brought to the vulva, and brisk friction over the abdomen to excite contraction of the womb, which being accomplished to some extent, the child was delivered; it was nearly lifeless, but there being free pulsation in the cord, it was not taken from the mother until free respiration was established. I was careful at the delivery of each child to tie both ends of the cord. The condition of the mother was now extremely critical, and to ensure contraction of the womb, I kept up brisk frictions over the abdomen for half an hour or more, before I attempted the delivery of the placenta, which being accomplished, I kept up friction at intervals for half an hour longer. The mother all this time was extremely exhausted and almost pulseless; but by persevering in the use of the brandy and laudanum, and keeping up the frictions, at the end of two hours the pulse rallied and the womb contracted, and in three hours I had the satisfaction of seeing my patient safe. She threw up the brandy, when a large pill of opium was given with a very happy effect. She drank about a pint of brandy toddy and two teaspoonsful of laudanum in about two hours; she recovered without a bad symptom. The children are all well formed and still living and hearty—two males and one female. The first, a male, weighing seven pounds; second, male, four pounds; third, female, five pounds—making in all sixteen pounds. The placenta was very large, by actual measurement it was twelve inches across in one direction and fourteen in another, and two inches thick through the centre: it was one placenta with

three divisions upon its fœtal surface; each child floated in its own waters and was surrounded by its own membranes, there being three distinct cords. Mrs. E. is a delicate woman, aged about thirty-five years, and the mother of seven children, including the last three. The father is a stout, healthy man of middle age.

December 12*th*, 1840.

REVIEWS.

ART. III.—*Medical and Physiological Commentaries.* By MARTYN PAINE, M. D. A. M.

Vitæ tam vires, quam actiones expono.—*Biblia Naturæ.* Morborum quoque te causas et signa doceo.—*Virgil.* In two volumes. New York; Collins, Keese & Co., 254 Pearl street. London; John Churchill. 1840. pp. 1530, 8 vo.

THE work, whose title is announced in the above heading, is one of the most remarkable contributions that has been made to the medical literature of our country.

As an American production, not only is it unusual in its size, and in the abundance of its matter, it is still more unusual on account of the extent and elaborateness of research, especially in books, and of the great amount and diversity of learning, both ancient and modern, by which it is characterized—and, as respects the *latter* quality, we might safely add *enriched.* Indeed in both qualities, if we mistake not, it may be pronounced *unique* in the medical annals of the United States. And in standing sufficiently correspondent to these are the magnitude, and bold ambitiousness of its aim and object—namely, TO EXPOUND, VINDICATE, AND DETERMINE, SOME OF THE FUNDAMENTAL PRINCIPLES, AND MOST IMPORTANT DOCTRINES, IN THE PHILOSOPHY OF MEDICINE.

How far our author has succeeded, in the accomplishment of this arduous and intrepid enterprise of mind, it might be hazardous, and not perhaps altogether becoming in us, to undertake to decide. An attempt of the kind might be thought to betray in us an unauthorized assumption, as respects our own competency to adjudicate and settle some of the highest and most intricate points of litigation in the science of medicine—perhaps we might say, *in any of the sciences.* For, of all the branches which compose the aggregate of human knowledge, that involving the principles and laws, which preside over living organized matter, and regulate its functions, especially when considered in its connexion with mind, is at once the most lofty and subtle, the most recondite and difficult of attainment.

In the movements of the universe of dead matter, whether contemplated in the magnitude of worlds, or the minuteness of atoms, there prevail an uniformity and certainty of action and change, which admit of calculation, and furnish a degree of fore-knowledge equally certain. Hence the branches of science embracing the phenomena and causes of these movements and their consequences, have received, by way of pre-eminence, the title of "*exact.*"

But in the functions of all forms of living matter, whatever may be its rank in the scale of being, not only is the case *otherwise;* it may almost be said to be directly the *reverse. There*, so different from each other, and, at the same time, so mutable and uncertain, are the kinds and degrees of action and its effects, that they *too frequently*, not to say *generally*, set calculation, and foresight, and confidence at defiance. Hence the impossibility of arriving, as relates to them, at definitive conclusions.

We speak not here of the *positive* condition and character

of the principles and laws that govern the world of living matter. Those great sources and regulators of action and change are, *in themselves and in their relations to one another*, as certain, harmonious, and stable, as are any of the other elements or attributes of creation. And creation, being the work of an ALL-PERFECT BEING, is free itself from imperfection and fault. The irregularity and unstableness apparent in it, are *only* apparent. They exist only in relation to ourselves, on account of the insufficiency of our knowledge and comprehension of them. Should the period ever arrive (and it would be difficult to give a reason, why we should despair of its arrival,) when the natural causes which preside over the functions of living matter shall be as thoroughly understood, as are now the principles and laws of mathematics and mechanics, computations respecting their operations and the results of them, will be equally unerring.

For reasons such as these, we say, it might, not improperly perhaps, be deemed too assuming in us to attempt a positive decision of the correctness or incorrectness of the opinions and doctrines for which our author contends. And still more presuming and inadmissible might it be thought in us, were we to endeavor to fasten authoritatively our own decisions respecting those subjects on the minds of our readers, who have an equal right, and perhaps more ability, to form correct conclusions, than ourselves. Those members of the profession, who are desirous of attaining a thorough and competent knowledge of the work we are examining must peruse it themselves; and not merely "peruse" it, but make it a subject of laborious and accurate study. In no other way can their desire be gratified.

These considerations however furnish no good reason why we should decline submitting to our readers such opinions

and thoughts on the general character of the whole production, as well as on the special character of some of its subdivisions, as a careful inspection of it has enabled us to form. Nor is it our intention to decline what we regard as a duty. On the contrary, we shall avail ourselves of the liberty and right conceded to reviewers, by the canons of criticism, to scrutinize strictly, not to say severely, several of the leading tenets of our author. And, in thus proceeding, though solicitous neither to injure nor offend, we shall notwithstanding, irrespectively of aught save truth and usefulness, speak of his writings, in matter and manner, as we may think they deserve. We shall adopt, as our motto, that which should be held sacred alike by the critic and the judge, *fiat justitia, ruat cœlum*. And if we obey not its mandate, our failure shall be the issue of an error in judgment.

The "Commentaries" of Dr. Paine have nothing systematic in their arrangement or form. They do not even constitute a continuous work. Nor could they be made available for such a work, except in the character of elementary ingredients. Yet are they intended, as already suggested, to have somewhat of a systematic effect, by illustrating, carrying out, and confirming certain leading and important doctrines in the philosophy of medicine. They consist of several very extensive and ponderous articles, or rather essays, and a few shorter and lighter ones, treating of subjects which have no immediate connexion with each other; and each essay is divided into "Sections," under which, subordinate points embraced in the scope of the leading disquisitions, are considered in detail. The subjects or titles of the essays are as follows:

Vol. I.—Essay I.

"VITAL POWERS.

II.

"PHILOSOPHY OF THE OPERATION OF THE LOSS OF BLOOD.

III.

"THE HUMORAL PATHOLOGY."

Vol. II.—Essay I.

"PHILOSOPHY OF ANIMAL HEAT.

II.

"PHILOSOPHY OF DIGESTION.

III.

"THEORIES OF INFLAMMATION.

IV.

"PHILOSOPHY OF VENOUS CONGESTION.

V.

"COMPARATIVE MERITS OF THE HIPPOCRATIC AND ANATOMICAL SCHOOLS.

VI.

"ON THE PRINCIPAL WRITINGS OF P. CH. A. LOUIS, M. D."

From these essays, pursuing the order of the preceding enumeration of them, it is our purpose, in our review of the "Commentaries," to make such extracts as may be deemed best calculated to communicate to our readers some knowledge of the general contents of the work, accompanied by remarks expressive of our own views of the subjects discussed, and of the principles and doctrines maintained in relation to them. With this design we shall begin with the essay on the

"VITAL POWERS."

Under this head Dr. Paine, like a warrior, confident alike of the rectitude of his cause and of his own powers to maintain it, promptly "shows his colors," and heralds forth, in no doubtful terms, the principles for which he is resolved to make battle. And battle he does very strenuously make, from the beginning to the end, not only of the present essay, but of his two elaborate and massy volumes. Every "Section," and almost every page of the entire work, is, more or less, an arena of conflict. To vary our style rendering it less warlike, and therefore more appropriate to our subject and purpose, Dr. Paine is a controversial writer; and though we do not, as will appear hereafter, concur with him on every subordinate point he discusses, we consider him, as relates to most, if not all, his fundamental principles and general doctrines, correct and triumphant. The reason of his triumph is plain. He contends for TRUTH, as it is clearly we think expressed in the BOOK OF NATURE, is master of his own subject, and possesses ample means for its illustration and defence. He is, as will be presently perceived, a VITALIST and SOLIDIST. *And so, if we mistake not, is Nature herself.* His course therefore was straight and obvious. And he has pursued it *substantially*, though not, we regret to think, as will be made appear hereafter, in the most direct, conclusive, and desirable manner. He has taken Nature however for his guide, marked her footsteps, followed in her path, and faithfully employed, in vindication of sound principles in medicine, the all-sufficient means, with which she supplies her industrious votaries and enlightened advocates. And thus pursuing his purpose, with ability and perseverance (and he

is destitute of neither) his failure to accomplish it may be pronounced *impossible.* For the ultimate triumph of truth is as certain as any of the other decrees of Heaven.

We have said that, in the discussion of his subjects, Dr. Paine pursued the path of Nature. And so he did. But not *directly;* nor with a steady and well-regulated determination to reach his object with the greatest certainty, and the least consumption of time. His course is often exceedingly devious, and his progress therefore *unnecessarily*, not to say, *unreasonably* slow. Instead of selecting the means requisite to *insure* his success (encumbering himself with nothing more) and then advancing with resolution and despatch to the accomplishment of his enterprise; his determination seemed to be, to leave nothing behind him unexplored, that bore the slightest relation to the object he had in view; however useless it might be toward its attainment. Hence resulted a twofold evil. A superabundance of time was wasted by him, in making his *collections* (for they were *selections* no longer;) and, when completed, they were so weighty, that they still farther clogged and retarded his progress, and so cumbrous that he was unable to wield them with the vigor he might have otherwise displayed, and the effect he might have produced. They obstructed the play of his mind, as a plethora of blood does the play of the heart.

In plain terms, our author seems to think that the position he is advocating, whether small or great, complex or simple, intricate or easy, is never sufficiently illustrated and established, until he has said about it every thing that can be said, and quoted, as far as his remembrance extends, (and his memory on the subject of book-knowledge is astonishing) every author that has written on it, either in an ancient or a modern tongue, from the days of Hippocrates to the present

period. Nor does he in his citations and references observe, in all cases, the most lucid order. The unfortunate consequence of this mode of discussion is, that he accumulates such a mass of matter, (not a little of it we *think* entirely superfluous) as can hardly fail, as already mentioned, to burden and embarrass his own mind, and detract from the vigor and efficiency of its action. And we *know* that it so bewilders and puzzles, at times, the mind of the reader, as to render him doubtful of the genuine result of the disquisition. When toiling through one of our author's *unnecessarily* learned and protracted arguments, we have felt as if threading a wilderness of trees and under-bush, whose stems and trunks obstructed, while their superabundant foliage darkened our path. Had we not felt confident of the value of what we were in pursuit of (we mean the product of our author's labor) we should have certainly declined the fatigue of searching for it. But the promised worth of the prize cheered us on in the chase; and it is but justice in us to acknowledge, that when the capture was made we were not often disappointed in our anticipation of its value.

In a word; too much light mars the pleasure and distinctness of vision, as certainly as too little. And the same is true of the testimony of quotation. A superabundance of it confounds and darkens. Nor have we ever perhaps witnessed a more decisive confirmation of this truth, in a scientific production in most other respects so valuable, than in that which we are examining. Clearness and condensation are two of the most important qualities of composition and discussion. And they are rarely if ever the issue of extensive reading and clouds of authority. Assuredly they are not the *necessary* issue of them. No; there are perhaps but two methods which argumentative writers and speakers can safely

practise. Let them briefly and lucidly state the positions they design to maintain, and adduce in support of them a moderate number of well established facts from nature, and sound authorities from accredited writers—and there stop—or at least be concise, direct, and simple in their inferences. Enlightened and unprejudiced readers and hearers will rarely fail to deduce for themselves the proper conclusions. Or, controvertists and debaters may first advance their facts and arguments, with brevity and perspicuity, in the form of premises, and infer from them as consequences, the principles and doctrines they mean to establish. But let them never over-burden the memories, and fatigue the minds of those whom they wish to instruct or convince, by a superabundance of matter, whether it be derived from nature, or from books. Neither of these methods, however, does our author pursue. While he amasses much more matter than is either necessary or useful, (most of it perhaps sufficiently pertinent,) he observes, in the arrangement of it, nothing of that well-conceived and lucid order, which is so important in the discussion of controverted points—without which indeed obscurity and confusion, rather than light and order, are the perplexing product. But we must close these preliminary remarks, and proceed to the accomplishment of the task we have undertaken.

This however we cannot do, at the present time, in the order, and with the despatch, on which we had calculated. Causes, over which we have no control, compels us to suspend our labours for an indefinite period. We shall close this fragment of an article, with a brief notice of our author's last "essay"—his remarks on the "principal writings of Dr. Louis." That he does not join heartily in the chorus of

hosannas, pealed so extensively to the Parisian pathologist, appears sufficiently from the following quotation.

"Our author (Louis) has made all the great lesions of "the typhoid affection," all the constitutional disturbances, and even the cerebral affection, to revolve about the lesion of the glands of Peyer. This is the point of departure, here all the reasoning terminates, and sits enthroned the whole essential pathology of the disease, and for no *other* reason than that the glands of Peyer were found *rather* more frequently altered in structure, than any other part. (p. 682, *Sprengell.*) Little, very little, is allowed even to the disorganized state of the alimentary mucous membrane, or of the liver, or even of the brain itself; and nothing whatever to functional disease, though attended by an injection of the arteries and veins, unless there exist manifest lesions of structure. Indeed it is with our author one constant reiteration of "proportions and disproportions between *the symptoms and lesions of structure*—always terminating in the glands of Peyer." * * * "Whatever display of symptoms our author may have made, his reasoning, his pathology, and even his therapeutics, are founded upon the debris of the body—we mean upon the glands of Peyer. Our author therefore must stand the ordeal by which he has tried and condemned the whole of his profession." * * * "As to the glands of Peyer, the consideration alone which our author has bestowed upon them is a sufficient index to all his medical opinions, and explains abundantly the principles in which the "numerical method" originated, and the therapeutical treatment which he carried out to the gravest inflamations." (Vol. II, pp. 752–3.)

This is but one, out of scores of quotations we could easily make from the Commentaries of Dr. Paine, alike unfriendly to the doctrines of Louis. Indeed the main purport of his essay on the subject, is to discredit, not to say *proscribe* those doctrines, which he assails under the condemnatory title of "*false philosophy.*"

Without gravely attempting, at present, to arbitrate between two writers, one of them so able and learned as the American, and the other so popular and fashionable as the

Frenchman, we say unhesitatingly, that we have long witnessed, with dissatisfaction and regret, the dense and unmeasured clouds of professional incense, that have risen to the latter, from numerous altars in the United States. Such servile *man-worship* (for the practice alluded to amounts to that) if it be not humiliating to the medical character of our country, is sufficiently so to the spirit of those, who so obsequiously minister in it.

What, we ask, has M. Louis done, for the real advancement of practical medicine, that entitles him to such homage? and the only reply which truth countenances, is, NOTHING!! In point of example, he is proverbially one of the *most unsuccessful* practitioners in the metropolis of France. And that is a high standard of comparison. For, in that metropolis, practical medicine, if reports and statistics on the subject be not deceptive, is in a miserable condition—a condition lower than in perhaps any other large European city—and greatly below its standard condition in the towns and villages of the United States.

M. Louis, though professing to be an unprejudiced observer and interrogator of nature, and proclaimed as such, by his pupils and followers, is one of the most confirmed theorists, and exclusive dogmatists, that has appeared in medicine. In his condemnation of the opinions and proceedings of his predecessors and contemporaries, and in assuming that his own method of cultivating medicine *approaches* perfection, if it does not reach it, he is scarcely less sweeping and self-sufficient than Paracelsus. In *his* estimation all, or most, at least, that is professionally valuable, centres in himself, and is incorporated in his "*numerical method*," and his *pathological discoveries.* According to his own estimate of matters, and that of his worshippers, he is the great medical Juggernaut of modern

times—or of *all times*—for Æsculapius himself was not we belive a "numerical" physician.

Whatever value may belong to Louis' discoveries in morbid anatomy (and we are not inclined to depreciate them) his scheme of counting is, we feel confident, *immeasurably overrated.* Never will it—never *can* it issue in the high advantages, in the *treatment and cure of diseases* (the only legitimate end of medicine) which its enthusiastic advocates and admirers expect from it. This we fearlessly proclaim, without pretending to a spirit of prophecy. And future time will confirm the prediction. Nor is this all we have to say on the subject.

Be its fate and fortune what they may, the "numerical method" belongs to M. Louis, not *of right*, but only *by ascription.* It is but *a new name* for an old and valuable attainment in medicine, heretofore denominated *professional experience.* What is experience but the *predominance of observation* as to certain given results? we mean the predominance of the occurrence and existence of certain facts or phenomena, more frequently and generally, than other varying or different phenomena? Most assuredly it is nothing else. And the *amount* of predominance, Louis indicates by *numbers.*

All experienced physicians will say, and have always said, that they have discovered, in certain diseases, certain symptoms to prevail, and certain results to follow the employment of given remedies, and the steady pursuit of given modes of practice. And, adopting a little more precision, on the subject, M. Louis says, I have found these phenomena and results to prevail over others, in the proportion of *fifty* to *twenty;* or in some other proportion equally definite.

Nor do we deny all merit to this increase of "precision,"

by the distinguished Parisian. On the contrary, we acknowledge that it *has* merit; because it tends to the production of greater *accuracy* of observation.

But can M. Louis, by his scheme of figuring, convert the experience of one physician into the experience of another? Can he transfer the experience of the *old* and *practised* physician to the *young* and *unpractised* one? No; he cannot. As well may he attempt, by figures, to transfer the horsemanship and swordsmanship of a Murat to a clown or waterman, who never backed a horse, or drew a sabre. In medicine, as in all things else, man must derive his experience from practice and observation. The recorded experience of one may aid another in acquiring experience; but it cannot *give* him experience, as a *transferable possession.* Though M. Louis may bestow on the profession millions of counts of *his own*, physicians must still continue to observe and count for themselves, else they will never become eminent. Nor is this all. In the treatment of disease, a physician must found his practice not on what he has learnt from others; but on what he perceives to be the condition of patient when he prescribes. As far as he deviates from this rule, he is a mere imitator, and an empiric.

We have said that M. Louis' "numerical method" tends to the increase of accuracy in observation. And so it does. But does not Homœopathy tends to the same effect? Unquestionably it does; and that to an extent beyond perhaps even the "numerical method." One of the strongest features of the homœopathic *system* (if system it may be called) consists in the minuteness and accuracy of observation, which it practises and enjoins. Between the homœpathists and Louis there exists, in one respect, a wide difference. The former

direct attention more especially to the *effects of remedies;* the latter to the *symptoms* and *lesions produced by disease.*

In detailing the effects of phosphorus on the human body, one of the homœopathic writers fiills up *twenty-four* large and closely printed octavo pages. By other writers, under the same system, we were told that Magnesia artificialis produces three hundred and twelve symptoms or modes of action—pulsatilla nine hundred and forty—rhus radicans six hundred and fifty—ignatia amara five hundred—arsenic four hundred and sixty—and that certain other articles are not much less prolific in their effects.

In observing and counting, then, we say, we are yet to be convinced that the school of Hahnemann has not an ascendency over the school of Louis. And though we do not mean to insinuate that the two schools are of the same standing in science and merit, we consider them both extravagant and visionary, in some of their notions, and strongly suspect that each wastes time, in pursuit of those notions, which might be better employed on other subjects.

We shall only add, under the present notice, an expression of our hope, that we shall find leisure hereafter to give such farther analyses and expositions of Dr. Paine's "Commentaries," as may be more gratiying and useful to the readers and patrons of this Journal, and more worthy of a work, so erudite and able, as that we have been considering.

C. C.

Researches on the Pathology and Treatment of some of the most important Diseases of Women: by Robert Lee, M. D., F. R. S., Physician-Accoucheur to the British Lying-in Hospital and the Saint Mary-le-Bone Infirmary; Lecturer on Midwifery in the School of Webb street; London, 1833. pp. 220.

The well-merited reputation of the author of this interesting practical work, together with the great importance of the subject treated of, must plead our apology for laying an analysis of it before our readers, so long after its issue from the press. In fact, though it has been before the profession eight years, we apprehend it is comparatively a stranger to our brethren of the West, on account of its not having been republished in this country, an honor, which it much more richly merits than some that have received it from our Atlantic publishers.

The diseases discussed by Dr. Lee, in the small volume before us, are such as very frequently befall the puerperal woman, viz.; Puerperal Fever, Phlegmasia Dolens, and Uterine Hemorrhage, which, whether we regard their fatality or the obscurity of their pathology, claim the most anxious attention of the accoucheur. Although, as we shall presently have occasion to remark with more particularity, the researches of our author have not irrefragably established the pathological views he advances, the cases and dissections, which he has given us, bestow upon his work its chief lustre and value. Not content with the observation of morbid manifestations during life, he has pursued disease, with praise-worthy zeal, into its most secret lurking places after death, and contributed materially to the elucidation of its seat and nature. Dispensing with a longer grace, we shall request our readers to

sit down to the repast prepared for us. The work of Dr. Lee is divided into two parts; part first treats of Puerperal Fever and Crural Phlebitis; the latter appellation being used substitutively for *phlegmasia dolens*, which the author considers he has demonstrated to consist in inflammation of the veins of the thigh and leg; part second, of uterine hemorrhage. Chapter 1st. is taken up with introductory observations on the pathology of puerperal fever, the leading design of which is to show that in all cases of this disease, there is inflammation of the peritoneum or deep seated tissues of the uterus, its venous, absorbent, or muscular structure, and that the opinion, held by some very eminent men, that it is an idiopathic fever, *sui generis*, which produces inflammation in the uterine and other organs as its consequences, is to be rejected as untenable. This he has succeeded in doing very satisfactorily by a review of the histories of epidemic puerperal fevers, contained in the writings of such as have taken any adequate pains to investigate the ravages of the disease, by post mortem examinations. Puerperal fever must have existed from the most remote periods of antiquity; of this fact the records of medicine furnish abundant testimony; notices of it, however, are very cursory previous to its appearance as a malignant epidemic in the lying-in wards of the Hotel Dieu, about the middle of the seventeenth century. Since that period it has often occurred in the lying-in hospitals of Europe, in most of the large cities, and a great many sporadic cases have been observed. But, though the opportunities thus afforded have given rise to many *histories* of the disease, and the effects of remedies have been particularly noted, its pathology was but very imperfectly understood until very recently. Some, regarding it as a violent inflammation of the peritoneum, omentum, or other of the abdomi-

nal viscera, have recommended the most copious bloodletting and active purging for the treatment; others, referring all the symptoms, local and constitutional, to a specific, idiopathic fever, of a typhoid type, administer the most powerful stimulants and cordials. An inspection of the writings of such men as Hulme, Leake, Denman, Clark, Gordon, Hey, Armstrong, &c. will show this remarkable discrepancy of views and practice, and we should have remained in hopeless perplexity, destitute of such accurate knowledge as is necessary to furnish a clew to rational practice, if pathological anatomy had not been more carefully attended to, than it seems to have been by any of the distinguished writers, who have been mentioned. Dr. Lee had a clear perception of the chasm that remained, and of the necessity of farther researches to fill it. Alluding to these writers, he says:

"To reconcile their discordant statements, with respect to the nature and treatment of the affection, it appeared to me requisite, that it should be examined not only in hospitals, but also in private practice, for several successive years, throughout all the different seasons. In this manner did it seem only possible to ascertain, whether diseases had been described essentially distinct from one another, or merely varieties of the same affection, modified, perhaps, by some powerful, but unknown causes.

"From the 1st of January, 1827, to the 1st of October, 1832, one hundred and seventy-two cases of well-marked puerperal fever came under my immediate observation in private practice, and in the British Lying-in Hospital and other public institutions in the western districts of London. The symptoms and progress of these cases were watched with close attention; the effects of the different remedies employed were observed, and where death took place, I carefully examined the alterations of structure in the uterine and other organs.

"Of fifty-six cases which proved fatal, the bodies of forty-five were examined, and in all were found some morbid change, decidely the effect of inflammation, either in the peritoneal coat of the uterus, or uterine appendages,—in the

veins,—or in the absorbents of the uterus, accounting in a most satisfactory manner for the constitutional disturbance observed during life. The peritoneum and uterine appendages were found inflamed in thirty-two cases; in twenty-four, there was phlebitis; in ten, there was inflammation and softening of the muscular tissue of the uterus; and in four, the absorbents were filled with pus. These observations are therefore subversive of the general opinion now prevalent, that there is a specific, essential, or idiopathic fever, which attacks puerperal women, and which may arise independent of any local affection in the uterine organs, and even prove fatal without leaving any perceptible change in the organization of their different textures. As the constitutional symptoms thus appear to derive their origin from a local cause, it would certainly be more philosophical, and more consistent with the principles of nosological arrangement, to banish entirely from medical nomenclature the terms, puerperal and childbed fever, and to substitute that of uterine inflammation, or inflammation of the uterus and its appendages in puerperal women. Puerperal peritonitis and peritoneal fever, are terms not less objectionable than puerperal fever, for in many fatal cases there is no proof whatever of the existence of any morbid affection of the peritoneum."

The disclosures resulting from the anatomical researches of Dr. Lee are confirmatory of those of several late eminent French pathologists; Andral, Dance, Danyau, Tonnelle, Duplay, Dugès and Mde. Boivin all concur in representing that the inflammatory affection may attack separately or conjointly the peritoneal envelope, the proper tissue, or the veins and lymphatics of the uterus. This enables us to explain the discordant statements of previous observers, by some of whom we are assured that no vestige of inflammation exists in this disease, merely because the peritoneum was exempt from it; whereas, had their examination been extended to the deeper-seated structures, conclusive evidence of its existence would doubtless have been observed. The different constitutional effects, produced by the same pathological lesion, viz., inflammation, according as one or another

of the uterine tissues may be its seat, will enable us, also, to reconcile the conflicting portraitures of the disease, and the opposite methods of treatment recommended by different writers. We postpone any particular remarks on this variety of constitutional affection, and the corresponding variety of treatment demanded, until we come to trace, with our author, the different forms of uterine inflammation, and in this place express our concurrence in the justness of his criticism upon the novel and peculiar views, emitted by Dr. Gooch, with regard to the nature of puerperal fever. Dr. Gooch contended that an affection of the peritoneum is an essential accompaniment of the disease, although he did not undertake to define what that affection is, because it is not uniform.

"The most remarkable circumstance," Dr. Gooch observes, "which the experience of the last few years has taught us about peritoneal fevers is, that they may occur in their most malignant and fatal form, and yet leave few or no vestiges in the peritoneum after death. The state of this membrane, indicated by pain and tenderness of the abdomen, with a rapid pulse, appears to be not one uniform state, but one which varies so much in different cases, that a scale might be formed of its several varieties; this scale would begin with little more than a nervous affection, often removable by soothing remedies, and, when terminating fatally, leaving no morbid appearances discoverable after death. Next above this, a state in which this nervous affection is combined with some congestion, indicated, in the cases which recover, by the relief afforded by leeches, and in the cases which die, by slight redness in parts of the peritoneum, and a slight effusion of serum, sometimes colorless, sometimes stained with blood. Above this might be placed, those cases in which there are in the peritoneum, the effusions of inflammation without its redness; namely, a pale peritoneum and no adhesions, lymph like a thin layer of soft custard, and a copious effusion of serum rendered turbid by soft lymph. Lastly, the vestiges of acute inflammation of the peritoneum, viz., redness of the membrane, adhesion of its contigous surfaces, a copious effusion of serum, and large masses of lymph."*

* An Account of some of the most Important Diseases peculiar to Women, by Robert Gooch, M. D., 1831.

There can be no doubt that women, in the puerperal state are liable to purely neuralgic attacks, accompanied with diffused pain of the abdomen, and a rapid soft pulse, which are best relieved by opiates and warm fomentations; and there is as little doubt that spasmodic contractions of the uterus, constituting after-pains, have been mistaken for puerperal fever. Such affections may, indeed, pass into inflammation, but until the transition takes place, there is no propriety in considering such attacks as puerperal fever, and they will yield most readily to anodynes. But the assumption is wholly gratuitous that the peritoneum is the seat of this nervous affection; it is much more probable that the proper tissue of the uterus is implicated. Dr. Gooch erred in restricting the seat of puerperal fever to the peritoneum; it may be perfectly intact, and yet the subjacent uterine tissues may exhibit the vestiges of the most intense and destructive inflammation.

"In investigating the morbid anatomy of this class of diseases, Dr. Gooch appears to have been satisfied with simply inspecting the peritoneal covering of the uterus; now I am strongly inclined to believe, that if he had carefully examined the uterine, spermatic, and hypogastric veins, the absorbents, the uterus, and its appendages, and the sub-peritoneal tissues, he would frequently have found acute inflammation or some of its consequences. With the phenomena of inflammation of the deep-seated structures of the uterine organs, he appears indeed to have been perfectly unacquainted, as they are not even alluded to in the course of his Essay, and are generally confounded with the effects of loss of blood. In a fatal case, examined by Mr. Stanley, it is indeed stated by Dr. Gooch, that no inflammation of the veins of the uterus was detected, but the symptoms had not been such during life as to render it probable that such a condition of the veins existed. The absence of increased vascularity of the peritoneum, and of lymph and serum in its sac, does not prove that the subjacent tissues are in a healthy state. That a nervous affection or congestion of the peritoneum should give

rise to all the symptoms and consequences of fatal uterine inflammation, is not only highly improbable, but is wholly unsupported by facts. Had Dr. Gooch estimated more correctly the value of pathological anatomy, in investigating the nature of disease, and placed less reliance on the uncertain operation of remedies, he could not possibly have fallen into so many serious practical errors respecting puerperal fever, as well as some of the organic diseases of the uterine organs in the unimpregnated state."

All the observations which our author has made, according to his judgment, warrant the following general inference:

"That inflammation of the uterus and its appendages must be considered as essentially the cause of all the destructive febrile affections which follow parturition, and that the various forms they assume, inflammatory, congestive and typhoid, in a great measure depend on whether the serous, muscular, or venous tissue of the organ has become affected."

In chap. ii, Dr. Lee describes the changes produced by inflammation in the uterine organs subsequent to parturition, and points out the local and constitutional symptoms by which their morbid conditions are characterized during life and distinguished from some other affections to which they bear a resemblance. The following are the principal varieties of inflammation of the uterus and its appendages in puerperal women, noticed by our author:

"I. Inflammation of the peritoneal covering of the uterus and of the peritoneal sac.
"II. Inflammation of the uterine appendages: viz. the ovaria, fallopian tubes, and broad ligaments.
"III. Inflammation of the mucous and muscular, or proper tissue of the uterus.
"IV. Inflammation and suppuration of the absorbent vessels, and veins of the uterine organs."

It is very curious to observe the physiological independence, so to speak, of the different tissues, entering into the

composition of the same organ; a vital modification in any one of them may be easily propagated until the whole of *it* is implicated, while another, with which it is in immediate proximity, and with which vascular connexion is held, escapes entirely, or manifests but little sympathy. Thus in the digestive organs, the mucous membrane may be phlogosed and even ulcerated, and the subjacent muscular and serous coats be entirely healthy; or all these tissues, in aggravated attacks, may be simultaneously involved. The same is true with reference to the pleura, pulmonary parenchyma, and mucous membrane of the organs of respiration; the brain and its membranes: and Dr. Lee's researches, corroborated by those of other pathologists, attest the same in relation to uterine inflammation:

"These varieties of uterine inflammation," says he, "may take place independently of each other, though they are most frequently met with in combination. Peritonitis seldom occurs without some inflammation of the uterine appendages; but I have found both these textures severely affected, while the muscular coat of the uterus, and the veins, were wholly exempt from disease. The venous and muscular tissues of the uterus, are also liable to attacks of severe inflammation without any corresponding affection of the peritoneal covering, though it most frequently happens that inflammation, when excited, either in the veins or muscular coat of the uterus, involves also the peritoneum."

The following remarks will be perused with interest, and enable us to understand the varying phases, and not less varying danger and fatality of puerperal fever, in different atmospherical constitutions: haply, they may clip the plumage of certain confident, boasting practitioners, who, because they have luckily encountered none but the least dangerous cases, proclaim their ability to vanquish the disease always, and wonder at the failures of their less fortunate, but equally competent brethren:

"Inflammation of the uterine organs, like inflammation of the lungs and other affections of a similar character which assume an epidemic form, occurs more frequently at one season than an other, and at one period the peritoneum is the tissue most commonly affected, while at other seasons, the deeper seated tissues are almost invariably found affected by inflammation. That there is no essential difference between these varieties of uterine inflammation is proved by the circumstance, that in the course of a few days, in the same ward of the British Lying-in Hospital, and in patients, who were placed in contiguous beds during the prevalence of the epidemic, when the disease appeared to be communicated from person to person, peritoneal inflammation, uterine phlebitis, and the other varieties enumerated, all occurred in their most characteristic form. In some patients the local and constitutional symptoms indicated the presence of acute inflammation of the serous covering of the uterus; and in those cases where active depletion was employed at the commencement of the attack, most frequently a speedy recovery took place. In other examples, at the onset of the disease, there was comparatively little pain in the region of the uterus, the pulse was from the beginning rapid and feeble and the symptoms were such as to contra-indicate the use of blood-letting and cathartics. Such cases usually terminated fatally in defiance of local bleeding and the exhibition of mercury and opium, and other remedies; and on examination after death, either the veins, the muscular structure, or the appendages of the uterus, were found to be the textures most frequently inflamed."

It becomes, therefore, a most interesting inquiry, and it behooves every practitioner of medicine to enter into it carefully, what are the signs or symptoms, characteristic of these different forms of uterine inflammation? And to these we are now to attend in company with our author: comtemplating them in the order in which they have been laid down. 1st. In inflammation of the peritoneal covering of the uterus, and of the peritoneal sac, there is great tenderness of the hypogastrium increased by pressure, with pyrexia, and these may be regarded as the pathognomonic signs of this variety of uterine inflammation. The inflammation begins in the peri-

toneal covering of the uterus, and before it spreads from thence, there is neither hardness, tumefaction, nor tenderness on pressue in any other portion of the abdominal cavity. It is only after the inflammation has spread to the peritoneal sac that the abdomen becomes painful, swollen and tympanitic; and it is then, also, that the digestive organs seriously suffer, and diarrhœa and vomiting of black or dark colored fluids follow, the pulse becomes extremely rapid and feeble, the tongue dry and brown, the lips and teeth covered with sordes. The following remarks of Dr. Lee, in regard to the development and symptoms of this variety of uterine inflammation, should be carefully remembered, particularly those at the close of the quotation;—for some, if we mistake not, are lulled into dangerous security, and flatter themselves that inflammation does not exist, because the lochia continue to flow and the breasts to secrete milk: or they suffer the disease to be fully formed, before suspicion is awakened because its onset is not announced by rigors and overwhelming pain:

"The manner in which the disease commences varies considerably in different individuals. The attack of pain is sometimes sudden, at other times the ordinary increased sensibility of the uterus, remaining after natural labor, passes insensibly into the acute pain increased by pressure, the chief pathognomonic symptom of this affection. Most frequently the accession of the disease is marked by rigors, partial or general, sometimes so slight as almost to escape notice, at other times so violent as to produce severe shivering of the whole body. The cold stage, after a longer or shorter duration, passes away, and is succeeded by heat of skin, suffusion of the countenance, acceleration of the pulse, and quick respiration, thirst, frequently nausea or vomiting, and vertigo or intense pain across the forehead. Cough is also a common symptom of the disease. The rigors precede, accompany, or follow the increased sensibility of the uterus. In some of the most severe cases there has been no distinct rigor; but a quick pulse, hot skin, and hurried respiration have rapidly succeeded to the uterine pain. In most of the fatal cases

the countenance has, from the commencement, been anxious and pallid, and the extremities cold.

"There is no uniformity observable in the appearance of the tongue in puerperal peritonitis. It is sometimes entirely covered with a thin, moist, white, or cream-like film; at other times, it is of a deep red, or brown color in the centre, with a thick yellow or white fur on the edges.

"The lochia, are often entirely suppresed; in other cases, only diminished in quantity. In some instances, they have an offensive odor. The mammæ usually become flaccid; yet, in some fatal cases, the milk has been secreted until a short period before death. The urine is often pased with pain and difficulty."

It is of great practical importance, inasmuch as peritoneal inflammation requires to be timely met by efficient treatment, to distinguish it from intestinal irritation, after pains and hysteralgia, with which it may be confounded. The distinguishing symptoms of intestinal or gastric disorder have been very correctly pointed out by Dr. Lee:

"The pain is from the commencement of the attack diffused over the whole abdomen: it is rather a griping than acute pain, does not commence in the region of the uterus, and is but little, if at all, aggravated by pressure. The abdomen is generally soft, puffy, and distended. The tongue is loaded; there is thirst and headache; neither the lochia, nor the secretion of milk, are suppressed. The febrile attack is usually preceded by evident signs of derangement of the bowels, such as flatulence, nausea, vomiting, constipation, or diarrhœa. Puerperal peritonitis is developed in a large proportion of cases before the end of the fourth day after delivery, sometimes even within twenty-four hours; whereas this affection rarely appears until the termination of the first week."

It is not always so easy to distinguish between inflammation and hysteralgia or severe after-pains. The pain attending genuine peritoneal inflammation is liable to paroxysmal exacerbations, resembling in this respect after-pains, and

these, if there is unusual sensibility of the uterus, may simulate inflammation. The correct rule of practice in such cases, which we have always pursued and are happy to find sanctioned by Dr. Lee, is, whenever there is doubt, to bleed and proceed otherwise as if the existence of inflammation were certainly ascertained. The well known pathological fact, already alluded to, that neuralgic may be transmuted into phlegmasial affection, in all the organs and tissues of the system, furnishes a sufficient warrant for the practice indicated, and besides, as Dr. Lee very justly remarks:

"There are few puerperal women, except those of a feeble and irritable constitution, or who have been previously exhausted by profuse hemorrhage, or some chronic disease, who are seriously injured by cautious depletion, local or general; and where death has followed the abstraction of sixteen or twenty ounces of blood from the arm, the fatal result may fairly be attributed to the disease, and to the neglect of the remedy rather than to its abuse. In cases of intestinal irritation, I have often found the local abstraction of blood followed by decided relief: and the same holds true with respect to the severe irregular pains without inflammation, which often occur subsequently to delivery, and do not yield to the ordinary means of treatment."

When the peritoneal covering of the uterus is inflamed, the uterine appendages, the ovaria, Fallopian tubes and broad ligaments, are very generally involved also; in only one case did Dr. Lee meet with an exception to this. But when the uterine portion of the peritoneum is only slightly affected, the uterine appendages may be more seriously diseased and even disorganized. Between the folds of the broad ligaments, Dr. Lee has observed effusions of serous or purulent fluids, as consequences of their inflamed conditions. The inflamed uterine appendages may become agglutinated together and, contracting adhesions with the peritoneum at

the brim of the pelvis and the inflammation extending to the cellular membrane exterior to the peritoneum, occasion an extensive collection of pus, in the course of the psoas and iliacus internus muscles, similar to what takes place in lumbar abscess.

"In three other individuals under my care," says Dr. Lee, "who ultimately recovered, the purulent matter formed along the brim of the pelvis made its way under Poupart's ligament to the upper part of the thigh, and escaped through an opening formed in that region. In all of these cases, contraction of the thigh on the pelvis took place, which remained for several months."

Such terminations of inflammation constitute the *depots laiteux* of the French writers of the last century, and were very hypothetically attributed to the repulsion of the milk, or its absorption and deposition about the pelvic viscera. With regard to the diagnosis between inflammation of the uterine appendages and peritonitis, as they are generally more or less combined, it is not always possible to make it with certainty. Dr. Lee observes, however, that in the former,

"The pain is generally less acute than in peritonitis, and is principally seated in one or other of the iliac fossæ, extending from them to the loins, anus and thighs. On pressure, the morbid sensibility will be found to exist chiefly in the lateral parts of the hypogastrium. The constitutional symptoms at the commencement of the attack do not materially differ from those which mark the accession of peritonitis, being often accompanied with strong febrile action, which speedily subsides, and is suddenly followed by prostration of strength and other changes which characterize inflammation of the muscular and mucous tissues of the uterus."

With the view of illustrating the phenomena of puerperal peritonitis and inflammation of the uterine appendages, our

author gives a number of interesting cases, with dissections, from which we select one or two, as instructive specimens.

"Mrs. Tiffin, æt. 32, No. 18, Mercer street, Long Acre. Delivered on the 7th of July, 1829. Labour natural. On the 9th, the uterus was felt above the brim of the pelvis large, and hard, and it was very painful on the slightest pressure; lochia and milk suppressed; pulse 110 and feeble; tongue white; bowels open. Slight relief followed the abstraction of fifteen ounces of blood from the arm, and the application of leeches to the hypogastrium. 10th July. The whole hypogastrium is now exquisitely painful, and the abdomen is swollen. Pulse more frequent. There has been much nausea and vomiting during the night. Bowels open. V. S. ad ℥xxiv. Eighteen leeches to the region of the uterus. 11th. Vomiting continues, abdomen less swollen, and pressure over the region of the uterus produces little uneasiness. Pulse rapid and feeble, respiration hurried, countenance sunk, occasional delirium. The whole surface of the body is now of a deep yellow color. She became gradually more feeble and died in the evening.

"*Dissection.*—Present, Drs. Sims, Clark, and Williams. The abdomen was distended by a great accumulation of air within the bowels; the peritoneal coat of the small intestines was red, and vascular: the peritoneum of the fundus, and anterior portion of the body of the uterus, was coated with albumen, and the sub-peritoneal tissue in this situation, contained a sero-purulent and gelatinous fluid. From the incisions made into the lower part of the body of uterus there escaped pure pus, but whether this flowed from the vessels, or muscular tissue, it was not easy to ascertain. Between the folds of the broad ligaments, there was a deposition of a gelatinous and purulent fluid, and both fallopian tubes were of a deep red color, softened, and their cavities filled with pus. The right ovarium was of the size of a common hen's egg, of a pulpy gelatinous consistence, and its healthy organization entirely destroyed. The whole presented the appearance of a soft, fibrous, vascular pulp; the left ovarium was similarly affected."

"Mrs. Gyde, æt. 22, Brewer street, Golden square, after a natural labour, was delivered of her first child, on the 26th June, 1830. She continued perfectly well till the 28th, when she was attacked with rigors, suppression of the lochia, and great tenderness in the region of the uterus. V. S. to ℥xii, and leeches to the hypogastrium were employed, and calomel

and opium were administered internally, at short intervals, by Mr. Stocker of Welbeck street, who saw her on the evening of the attack. The symptoms were not, however, relieved by these remedies. The pain extended gradually over the whole abdomen, during the three following days. The pulse became extremely feeble and frequent. The countenance sunk, respiration hurried. Tongue covered with a brown fur. Constant retching and vomiting. Before death, which took place on the 7th of July, (the 11th day after her delivery,) the belly had become enormously distended and tympanitic.

"*Dissection.*—Three or four pints of dark colored sero-purulent fluid were contained in the abdomen. The peritoneal sac and great intestines were distended with a fœtid gaseous fluid. The uterus and its appendages, the omentum, and small intestines, were all imbedded in lymph, and their peritoneal coat exhibited the other signs of having been severely inflamed. Near the fundus uteri on the left side, immediately underneath the peritoneum, was a circumscribed deposit of pus, about the size of a nutmeg. Another abscess, of a similar description, was observed under the peritoneal coat of the uterus on the left side. The other tissues of the uterus were healthy."

It is to be remarked that the autopsy in these cases shows clearly that they were of a more than usually violent grade; in one, the inflammation extended to the sub peritoneal tissue which was infiltrated with sero-purulent fluid; in the other a small abscess was found in the same tissue.

The next variety of uterine inflammation, that involving the muscular tissue of the organ, is much more rapid and fatal than the one we have just noticed, and has been very generally overlooked by the English writers, though it has been accurately described by the French. In examining the uterine structures, with a view to detect the lesions it may have suffered, care is requisite not to mistake for morbid, appearances which are perfectly normal to the uterus, shortly after delivery The following description will convey

a very good idea of the healthy appearances of the organ, under the circumstances noticed:

"For several days after delivery, where no disease of the uterus has supervened, its lining membrane is coated with a yellowish brown, dark red, or ash-grey colored layer of no great thickness, which seems to be formed chiefly of the fibrine of the blood with small portions of deciduous membrane; the os and cervix uteri are at this time of a deep red color, from blood extravasated under the lining membrane. Where the placenta had adhered, numerous dark colored coagula of blood are found to seal up the orifices of the uterine sinuses in the inner membrane, and frequently to extend a considerable distance into these veins. The clots of blood, one extremity of which hangs loose within the cavity of the uterus, are often connected with a large fibrinous coagulum, which entirely fills the fundus uteri, and every where firmly adheres to the innner surface of the organ. The dark-colored layer, which usually coats the inner surface of the uterus after delivery, has been supposed to be the result of gangrenous inflammation, and has been described as such by some pathologists."

But when the muscular tisssue has been the seat of inflammation, it is found, on removing the fibrinous layer, to be totally disorganized, of a dark purple, greyish or yellowish hue, and so softened in texture as to be torn by the gentlest efforts made in removing the parts from the body.

"In some cases," Dr. Lee informs us, "the inflammation has affected the greater part of the muscular structure of the organ; in others it has affected only the cervix of the uterus, or the part where the placenta had adhered, and the natural appearance of the muscular fibre has been lost. In other instances, depositions of pus have been observed, either immediately under the peritoneum, or between the fibres of the proper tissue of the uterus."

This affection has been described under the term putrescentia uteri and has been supposed by some German and French writers to be a peculiar, specific disease, distinct from and

independent of inflammation. But Dr. Lee thinks it may be safely inferred that it is the product of the inflammatory process, from the usual effects of inflammation on the muscular tissue in other parts of the body, and from the frequent occurrence of this affection in combination with peritonitis, and other varieties of uterine inflammation. The symptoms which attend inflammation of the proper tissue of the uterus, as given by Dr. Lee, are, pain of the hypogastrium, diminution or suppression of the lochial discharges, and rigors with *rapid feeble pulse;* the countenance becomes pallid, with an expression of great anxiety and distress; severe headache and delirium may be present; the skin is hot and dry at first, but afterwards cold, and sometimes of a peculiar blue or sallow tinge; the respiration hurried, *with great prostration of strength:*

"The diagnosis of this variety of uterine inflammation," observes Dr. Lee, "particularly where it is complicated with peritonitis or phlebitis, which is frequently the case, is extremely difficult. The prostration of strength, and the alteration of the features, which often exist from the commencement, the feebleness and rapidity of the pulse, the irregular fœtid state of the lochia, are not such constant symptoms as to be considered pathognomonic, and they may arise from other causes. The most attentive consideration of the phenomena, will only lead to a probability as to the nature of the affection; and sometimes its existence cannot be determined during life. In all the cases of this affection which I have observed, the resources of nature and of art have proved equally unavailing in arresting its fatal course. The active inflammatory symptoms which have usually manifested themselves at the commencement of the attack, have passed speedily away, whatever plan of treatment has been adopted, and have been rapidly succeeded by symptoms of exhaustion. Where the disease has not been complicated with inflammation of the other tissues of the uterus, the symptoms have not been such as to indicate the necessity of venesection; and, in one case, where a considerable quantity of blood was abstracted from the system, death soon followed. In other

cases, where an opposite plan of treatment was had recourse to, the fatal termination seemed to be less speedy, though equally certain."

Some cases related by Dr. Lee, as well as others referred to by him, render it probable that this disorganization or softening of the uterine tissue may take place during utero-gestation and give rise to spontaneous rupture of the uterus. A case of this description occurred likewise in this city, a few years ago, and was reported in the Louisville Journal of Medicine and Surgery, No. 1, for January, 1838, by Dr. Lewis Rogers, whose habits of pathological research afford a guarantee for the accuracy of his observations. We select but a single case from Dr. Lee, as a specimen of the symptoms and post mortem appearances, observed in inflammation of the proper tissue of the uterus:

"Mrs. Chapman æt. 36, No. 9, Belton street, Long Acre. Delivered on the 19th of August, 1830; labour easy. On the 24th, after drinking freely of porter, was suddenly attacked with a violent rigor, of long continuance, which was succeeded by acute uterine pain, headache, and great frequency of pulse. No remedies of any kind were employed until the 27th, when I was first called to see her. She had been delirious in the night. The pulse 130, soft and compressible. Hurried breathing, great prostration of strength. Tongue brown and furred; diarrhœa. Surface of the body of a deep sallow color. The hypogastrium was painful on pressure. The abdomen generally neither swollen nor tender.

"The symptoms became aggravated in the night and she died on the morning of the 28th."

Concerning the next variety, inflammation and suppuration of the absorbent vessels and veins of the uterus, Dr. Lee remarks:

"No pathologist in this country had observed a case of inflamed absorbents of the uterus before the month of July,

1829, when a fatal example of the disease occurred in St. George's Hospital. A woman æt. 30, in an advanced stage of pregnancy, was admitted into that hospital on July the 1st, under the care of Mr. Cæsar Hawkins, in consequence of sloughing of the skin covering a diseased bursa of the patella. The removal of the bursa was followed by great constitutional disturbance, and on the fourteenth, labour came on. Two days after, symptoms of uterine inflammation made their appearance, and on the eighteenth day death took place. Though the pain was relieved by bleeding, she never rallied after the attack. On examining the body, some puriform lymph was found in the pelvis, but there was no increase of vascularity in the peritoneum. In the broad ligaments some fluid was also effused, and on each side numerous large absorbent vessels were observed passing up with the spermatic vessels, to the receptacle of the chyle, which was unusually distended. All these vessels and the reservoir itself, were filled with pus; but that in the receptacle was mixed with lymph so as to be more solid; the vessels themselves were firmer and thicker than usual. The thoracic duct was quite healthy. The uterus was scarcely contracted and the internal surface of the lower half was soft and shreddy and in a state of slough. The upper part, where no pus was found externally, was also healthy, or nearly so on its inner surface."

Since the occurrence of this example, several cases have come under the observation of Dr. Lee, and a still greater number has been collected by the French pathologists. Inflammation of the absorbent vessels of the uterus is frequently combined with uterine phlebitis, and abscess in the proper tissue of the organ; and it must be borne in mind that pus may be contained in the absorbents without these vessels having been inflamed. During pregnancy the absorbents receive very great development and are endowed with great vital activity, to fit them for the performance of the office assigned them after parturition, viz.; the reduction of the organ to its normal unimpregnated dimensions. These vessels, therefore, must not be supposed to have suffered inflammation, unless evidenced by an alteration of

their proper tunics—opacity, induration, softening, increased vascularity. The cases in which inflammation of the absorbents really exists appear to bear a very small proportion to those in which pus is found contained in them and the thoracic duct. In an article in the May number, 1836, of the *Archives Generales de Medicine*, M. Duplay informs us that during the year 1830 he had occasion to observe thirty-six cases of metro-peritonitis, with suppuration of the lymphatic vessels of the uterus, and he gives the following tabular view of the manner in which this alteration was combined with others. Among these thirty-six cases, along with the suppuration of the lymphatic vessels, there was 1st. The presence of sero-purulent effusion into the cavity of the peritoneum in 29 cases; 2d. Absence of the sero-purulent effusion, in 7 cases. Among the 29 patients who had sero-purulent effusion, the uterus and its appendages were sound in 3 cases; besides the sero-purulent effusion there were pseudo-membranous concretions and concrete pus on the inner face of the uterus in two cases; there were purulent infiltration of the sub-peritoneal tissue, of the meso-rectum, and mesentery; purulent collection in the ovaries, layers of pus on the internal surface of the uterus, softening with suppuration or gangrenous softening of the same surface, in 16 cases; besides these alterations, variously combined, pus was found in the cavity of the veins in 8 cases. Among the 7 patients, who offered no sero-purulent effusion into the peritoneal cavity, pus was found in the uterine veins, in the sub-peritoneal cellular tissue, or concrete pus on the inner surface of the uterus in 4 cases; absence of pus in the veins, but infiltration of the sub-peritoneal tissue and concrete pus on the internal face of the uterus in 2 cases; softening of the inner surface of the uterus without suppuration in one case. Thus it appears

that in the 36 cases observed, in which pus was found in the absorbents, there was at the same time suppuration of the peritoneum, uterus, or its appendages in all the cases but one, and in this there was gangrenous softening of the internal surface of the uterus. M. Duplay thinks that a case given by Cruiveilhier (*Anat, pathol. du corps humain*, 13 *livr*, *p.* 5) is the only one furnished by the records of medicine, in which there was suppuration of the lymphatic vessels, with complete integrity of the uterus and peritoneum. We shall not pursue the inquiry, which is more curious than practical, but return to trace with our author the vestiges of inflammation in a different order of vessels, the uterine veins. Uterine phlebitis has now been so frequently observed, that we have become tolerably familiar with it, and though it is not always possible to verify it in its commencement, it gives rise afterwards to symptoms and consequences, which are peculiar to it:

"In women who have enjoyed good health," Dr. Lee observes, "during pregnancy, and in whom the process of parturition has been easily accomplished, uterine phlebitis occasionally commences within twenty-four hours after delivery, with pain more or less acute in the region of the uterus, accompanied or followed by a severe rigor, or a succession of rigors, suppression of the milk and lochial discharge, acceleration of the pulse, cephalalgia, or slight incoherence, with most distressing sensation of general uneasiness, and sometimes by nausea, vomiting, and diarrhœa. These symptoms, after a short duration, are succeeded by increased heat, tremors of the muscles of the face and extremities, rapid feeble pulse, anxious and hurried respiration, great thirst, with brown dry tongue, and frequent vomiting of green colored matters. The sensorial functions usually become much affected, and there is a state of drowsy insensibility, or violent delirium and agitation, which is soon followed by symptoms of extreme exhaustion. The whole surface of the body not unfrequently assumes a deep and peculiar sallow or yellow color, or a petechial or vesicular eruption appears on different parts of the body. The abdomen, also, sometimes becomes swollen and tympanitic, and some of the remote

organs of the body, such as the lungs, heart, brain, liver and spleen, or the articulations and cellular membrane, and muscles of the extremities, suffer disorganization, from a rapid and destructive congestion and inflammation."

The suppuration and gangrene in remote organs or parts, whether produced by secondary inflammation or the transportation of purulent matters, are not less singular than characteristic consequences of uterine phlebitis. The nose may become black and gangrenous, the eyes become suddenly affected with destructive inflammation, destroying vision many days before death, and enormous deposits of pus may take place in the cellular membrane, in the neighborhood of the large joints, or within the capsular ligaments with erosion of the cartilages. M. Tonelle states that the integuments covering the deep abscesses resulting from uterine phlebitis, are always of a violet color, or present a peculiar characteristic tension and shining appearance. The pus is not bounded by walls as in common abscesses, but diffused by an insensible transition into the surrounding parts:

"All these affections," says Dr. Lee, "have a common origin, and cannot be referred to any other cause than to the morbid condition of the veins of the uterus. The purulent, or other secretions, formed by inflammation within the cavities of these vessels, probably produce the whole of the injurious effects now described, by entering the system and contaminating the mass of blood, in like manner as poisons do when absorbed into the body. It may be true, as some have supposed, though it cannot be demonstrated, that a certain number of the purulent particles fix themselves in the muscles and other parts, like globules of mercury injected into the veins, and that they become the focus, or centre, of an inflammation exactly circumscribed, which speedily runs on to suppuration."

Sometimes uterine phlebitis pursues a much more insiduous and obscure march, the local symptoms, pain or uneasiness in the uterine region, are overlooked or do not exist, and the

disease is only manifested by the constitutional disturbance and destructive lesions in distant parts of the body, which it produces.

With regard to the veins which are most apt to be inflamed, the extension of the disease, and the morbid changes induced, Dr. Lee makes the following remarks:

"The veins which return the blood from the uterus, and its appendages, may be either wholly or in part inflamed; generally, however, the inflammation attacks the spermatic veins alone, and for the most part the one only on that side of the uterus to which the placenta has been attached; and it may either confine itself to a small portion of the vessel, or extend throughout its whole course, from the uterus to the vena cava. The usual consequences of inflammation of veins are then apparent, viz., injection and condensation of the cellular membrane in which they are embedded, thickening, induration, and contraction of their coats, and the deposition of lymph, mixed with pus and coagula of blood within their cavities.

"The same is the case with regard to the hypogastric veins, one only being generally affected. These veins are, however, rarely inflamed in comparison with the spermatic, and this would seem to depend on the latter veins being invariably connected with the placenta, to whatever part of the uterus it may happen to be attached."

Dr. Lee is of opinion that the inflammation of the veins, in uterine phlebitis, is traumatic and analagous to venous inflammation succeeding to amputations. This disease commences in the gaping orifices on the uterine surface, corresponding to the attachment of the placenta, by whose separation they are left open and a direct communication established between their cavities and the atmospheric air. Uterine phlebitis is most usually associated with inflammation of the other tissues of the uterus, and Dr. Lee says,

"Where the veins alone are inflamed, the peritoneal and muscular tissues remaining unaffected, there is often either

no pain, or only a dull pain with a sense of weight in the region of the uterus, and no other local symptom by which the disease can be recognized. The uterus too may return to its usual reduced volume, or nearly so, and it is only on the accession of the constitutional symptoms, viz., rigors, prostration of strength, rapid feeble pulse, low wandering delirium, attacks of vomiting and diarrhœa, with brown parched tongue, and ultimately rapid and destructive inflammation of the eyes, and purulent deposits in the substance of the lungs, that the existence of this insidious and dangerous affection can be determined. If the substance of the uterus be affected, this organ remains above the brim of the pelvis, large, hard and painful on pressure, as in puerperal peritonitis."

We subjoin two cases of uterine phlebitis from our author—the first an example of the insidious and deceptive form of the disease; the second an exhibition of it as manifested in the average number of cases:

Uterine Phlebitis, with ulceration of the Articular Cartilages, and purulent effusion within the Capsular Ligament of the right Knee Joint, &c.—Mrs. Mayhew, æt. 33, was delivered in the British Lying-in Hospital, on the 2d of March, 1829, after an easy and natural labor. The placenta was expelled in a few minutes after the infant, and her situation seemed favorable until the third day after delivery, when a considerable discharge of blood from the uterus took place. From the 6th to the 20th of March, she made no complaint of uneasiness in any part of the body, though her strength rapily declined. The countenance was of a dusky yellow tinge; the heat of the surface slighly increased; the respiration was hurried, particularly on bodily exertion; and the pulse was above 130 and feeble; the tongue pale and glossy, with total loss of appetite, though at no period was there nausea and vomiting. Bowels open. The uterus gradually receded into the pelvis, and pressure over the hypogastrium produced no sensible uneasiness. The milk was secreted sparingly. The lochial discharge had a peculiarly offensive smell.

"From the 20th to the 28th, when she died, the prostration of strength increased, and the pulse became still more frequent and feeble. The respiration was extremly hurried,

and she was incessantly harrassed with a hacking cough, and the expectoration of a frothy mucus. The abdomen continued soft and flaccid, and not affected by pressure. She, however, during this period, complained of excruciating pains in all the joints of the right superior extremity, and in the right knee joint, which was observed to be quite swollen, but not discolored. This patient quitted the Hospital on the 23d, and was under the care of Mr. Armstrong, of Golden square, from that time until the 28th. Dr. H. Davies and Mr. Armstrong were present when I examined the body.

"*Appearances on Dissection.*—On laying open the abdomen, the intestines and other viscera presented a perfectly healthy appearance, and the uterus was found reduced to its ordinary size a month after delivery. On careful examination of the peritoneal coat of the uterus, a slight adhesion was observed between it, and the rectum on the left side. The uterus being removed, and its cavity laid open, a portion of what appeared to be placenta, about the size of a large nutmeg, in a putrid state, was seen adhering to its inner surface, at the part corresponding with the adhesion between the peritoneal coat and rectum. The muscular tissue of the uterus around this was of a dark color, approaching to black, and as soft as sponge. On cutting into it, about a teaspoonful of purulent matter escaped from the veins, and a small additional quantity was forced out from them by pressure. Small coagula of blood and lymph, plugged up the surrounding veins. The spermatic, and other abdominal veins, presented no morbid appearance, and the uterine appendages were healthy.

"On opening the capsular ligament of the right knee joint, where a fluctuation was perceived, about six ounces of thin purulent fluid escaped, and the cartilages of the joint were observed to be softened and extensively eroded. There was no appearance, however, of inflammation exterior to the capsular ligament, and the femoral vein was healthy.

"The right wrist was swollen, but the structure of the joint was not affected. The cellular membrane around it was unusually vascular and infiltrated with serum.

"Mrs. Keene, æt. 31, No. 6, Draper's place, Euston square, after a protracted labour of three days, was delivered on the 14th of July, 1829, by artificial aid, of a still-born hydrocephalic child. Immediately after the expulsion of the child, she was seized with a fit of the most intense shivering, which continued upwards of an hour, notwithstanding the exhibition of the most powerful stimuli; and the exhaustion which

followed was so alarming that her life was despaired of. She rallied, however, and passed a quiet night. On the following, and two or three subsequent days, the shivering fits returned at irregular periods, sometimes in a slight form, at others, in that of a severe rigor, followed by a flush of heat, and partial or general perspiration. During this time, the effects consequent to parturition proceeded as usual. The uterus slightly painful on pressure; lochia natural; bowels open; pulse from 133 to 140, and extremely feeble. No complaint of uneasiness, with the exception of a troublesome cough and hoarseness, with which she has been afflicted during the latter months of pregnancy. On the 4th day from delivery, the secretion of milk appeared, for a short period, and afterwards receded. From this day to the 10th, the following were the symptoms: pulse rapid; skin universally of a dusky yellow color, and the heat of the surface increased; respiration hurried; thirst; tongue dry, but not furred; great prostration of strength; sallow and haggard countenance; restless and sleepless nights; mental faculties undisturbed. The uterus had gradually subsided, and no pressure, however great, either on it, or on the parts in its vicinity, caused pain, except in the right iliac region, where some uneasiness was felt; the flow of lochia natural; bowels regular. At this period, the hacking cough which had so long troubled her, became more frequent, and it was with difficulty she expectorated the ropy mucus which followed it, and which in the day amounted to an ounce. From the 11th day the respiration became more short and hurried; the pulse more rapid; occasional flushes of heat; thirst; extreme debility; diarrhœa. Pressure over the whole abdomen gave no uneasiness, nor was pain felt in any part of the chest, though auscultation plainly indicated the existence of disease, particularly on the right side. The patient made no complaint but of weakness, and of the cough. On the 12th, the dispnœa increased, and she sunk exhausted in the evening.

"*Dissection.*—Mr. Prout, surgeon to the British Lying-in Hospital, who had carefully observed the progress of the symptoms, from the period of delivery, was present with me when I opened the body. The uterus was of the size it usually is, about the second week after delivery, and exhibited externally no vestige of disease. On laying it open, its internal surface, as well as its muscular tissue, appeared also healthy, and the veins being traced, the right spermatic alone was found greatly enlarged and indurated. The uterus being removed from the body, for more minute examination, an

incision was made into the right superior angle, to which the placenta had been attached, and here its veins were discovered to be empty, and their internal surface of a scarlet color. On tracing them towards the trunks of the right spermatic vein, they were found to contain sanious purulent fluid, and were contracted in their diameters, and coated with false membranes. The veins of the right ovarium and fallopian tubes were all plugged up with firm coagula. The spermatic itself was lined throughout its whole extent with dense membranes of a reddish or of an ash-grey color. Its coats, independent of these membranes, were of extraordinary thickness and firmness; and more like those of a large artery than of a vein. Its whole cavity was contracted; in some parts occupied by a dark colored fluid, in others, quite obliterated by adhesions, formed between the surfaces of the membranous layers deposited within it. At the termination of the spermatic in the vena cava, its orifice was scarcely large enough to admit a crow quill; traces of inflammation extended beyond this orifice, the vena cava being partially lined from two or three inches above it, with an adventitious membrane, strongly adherent to its coats, which were at this part double their natural thickness. In its passage upwards, the inflammation had extended a short distance into the right emulgent vein, which near its orifice was coated with a pellicle of lymph. On opening the thorax, a stream of air escaped from the right side; the lungs were collapsed, and upwards of two pints and a half of a red colored serum were found in the sac of the pleura. The right inferior lobe was coated with lymph, and a portion of the pleura on the anterior surface was destroyed, and a black gangrenous slough exposed in the substance of the lung. The pulmonary texture around was condensed, and of a deep violet or livid color. The left inferior lobe was also partially coated with a thin layer of lymph, and the pleura at one point on the anterior surface was elevated, as if by a small hard globular body beneath it. When this was laid open, it appeared to consist of a thick yellowish colored cyst or capsule, containing a soft black matter like a gangrenous eschar. The substance of the lungs around was unusually dense, and of a dark livid color."

In retrospecting calmly and attentively the different varieties of uterine inflammation, which have now been placed with sufficient distinctness before our readers, the first reflection suggested is, that we have no diagnostic signs by which

it can be ascertained, with any degree of certainty, whether the muscular, nervous or absorbent tissue may be chiefly affected. Inflammation of the deep-seated textures may be so variously combined, and the symptoms to which they give rise are so entwined and confounded, that it is impossible to determine whether one is exclusively affected, or which is principally implicated. But it must be very apparent to the reader, though it may not have arrested his attention, that there is a striking difference in the local symptoms and constitutional affection, between the inflammation of these deep-seated structures and that of the peritoneal envelope of the uterus. In the former there is not from the first any thing like open reaction, or sthenic excitement; but the symptoms are of the typhoid kind *ab origine;* the pulse is *feeble* as well as rapid from the commencement, there are muscular tremors and profound prostration. In the latter, the ordinary signs and consequences of inflammatory action are exhibited; there is acute pain and tumefaction of the uterus, tenderness on pressure, the pulse though frequent is fuller, stronger, and more resisting; there is less disturbance of the sensorial or nervous functions; in a word, the febrile disturbance of the system is synochal, and the lancet and other depletory remedies are well borne, and must be used with freedom. Therapeutically considered, the former is widely different; neither the local nor constitutional symptoms indicate the abstraction of blood, nor can depletion be practised but at the imminent risk of irrecoverably prostrating the system. This distinction, which it is practically important to draw, is made by Dugès and Mde. Boivin, (*Traite Pratique des maladies de l'uterus, &c. Tome ii, p.* 231.) who describe an inflammatory and typhoid form of puerperal fever. It would be better, perhaps, to denominate them sthenic and asthenic, because

doubtless in both there is inflammation, but its manifestations and effects are modified by the differences between the tissues that are the seat of the morbid affection.

Passing over *Chap. iii*, which treats of the *causes of uterine inflammation in puerperal women*, because it contains nothing but what is familiar to the profession, we take up *Chap. iv*, in which the *treatment* is discussed with perspicuity as well as commendable brevity.

The treatment of puerperal inflammation of the uterus may be divided into first, that which is applicable when the peritoneal coat is affected; and second, that which is required when the deep-seated tissues are invaded, or, if it be preferred to retain the appellation, puerperal fever, the treatment of the sthenic and asthenic varieties of the malady. In the first variety, practitioners are very generally agreed as to the indispensable necessity of bloodletting, both general and local, which, to be efficient, must be early and vigorously employed. The remarks of Dr. Lee on this topic are so excellent that we cannot refrain from quoting them:

"When the symptoms of puerperal peritonitis manifest themselves as before described and in a violent form, twenty or twenty-four ounces of blood should be immediately abstracted from the arm by a large orifice, and while the patient has the trunk and shoulders considerably elevated in bed. We should not be deterred from employing the lancet because the pulse is small and contracted, provided it does not exceed 110 or 115 pulsations in the minute: for in many cases the pulse has become fuller and stronger during the time the blood has been flowing, or soon after, and there has been a marked relief from suffering. In all cases, if possible a decided impression should be made upon the system, and where syncope or fainting follows the venesection, it increases the salutary effect. In no case of inflammation of the peritoneal surface of the uterus have I observed any bad consequence to result from depletion carried to this extent, and in many from its early use, the force of the disease has at once been completely broken."

In violent attacks, or where the pain is but slightly relieved by the vensection, Dr. Lee directs the application of one, two, or three dozen leeches to the hypogastrium, proportioning their number to the urgency of the symptoms,—the bleeding to be promoted, after the leeches have come off, by fomentations, or by a thin warm linseed meal poultice. There are few cases, in his opinion, in which it is necessary to have recourse to a second bleeding from the arm, and when the propriety of this is indicated by the recurrence of acute pain, the quantity of blood should not exceed ℥xii or ℥xiv. On this subject it is proper to observe that the greater number of western physicians have it not in their power to employ leeches in their practice, and therefore, under the circumstances specified by Dr. Lee, they are compelled to repeat the general bloodletting, and they should use the remedy a second time with more boldness than he allows. If a repetition of the remedy be clearly called for by the symptoms, it should be used for *effect* and not under the restraint imposed by arbitrary prescription as to *quantity*. Unless this second bleeding be carried to the extent of again making a decided impression upon the circulatory system, so as to allow the engorged capillaries to relieve themselves by contraction, it had better not be practised at all, as it would only serve to exhaust the patient. Let it not be inferred from these remarks that we are laboring under that degree of *sanguimania*, which prompts to the rash unsheathing of the lancet, or its employment in cases of doubtful propriety. With Dr. Lee we entirely agree that seldom, if ever, is it necessary or safe to bleed a third time, and in a very large proportion of cases a single bleeding will suffice.

Immediately after the bleeding, Dr. Lee directs eight or ten grains of calomel, in combination with five grains of

antimonial powder and grs. 1½ or grs. ii of opium, or with ten grains of Dover's powder, and this should be repeated every three or four hours, until the symptoms begin to subside. In many of Dr. Lee's cases upwards of fifty grains of calomel have been given with decided benefit, and in two only out of one hundred and seventy cases has the mouth been severely affected. When the calomel and opium have subdued or mitigated the pain, a purgative enema or cathartic draught should be administered to open the bowels freely, when in some cases the uterine pain completely subsides.

Blisters to the hypogastrium and inside of the thighs and legs, Dr. Lee has often found advantageous, where pain in the uterine region has continued severe, even after general and local bleeding, and our own experience is in their favor. We have, also, obtained highly salutary effects from the external use of spts. turpentine over the hypogastric region.

On the recommendation of Recolin, Dance, and Tonellé, Dr. Lee has on several occasions tried injections of warm water into the vagina and cavity of the uterus, and, as he thinks, with decided advantage. These injections, repeated three or four times in the course of the day, they affirm, not only wash away the putrid matters adhering to the internal surface of the organ, but appear to relieve the irritation and inflammation of the organ itself.

To relieve the severe and distressing irritation of the stomach that not unfrequently comes on in the progress of uterine inflammation, our author has found ten grains of the sub-carbonate of potash in an ounce of aqua menth. virid., given every two or three hours, much more effectual than anodynes and effervescing draughts. Should diarrhœa take place, it is best controlled by opium in the form of the starch and laudanum glyster.

Such is a sketch of the treatment of puerperal peritonitis, recommended by Dr. Lee, and we can aver that it is as efficacious as it is simple. It is substantially the practice which we have pursued for many years, and with as much success, to say the least, as any other method of treatment can claim. We are fully aware that the *purgative* branch of the treatment has been pursued in a very different manner by many practitioners with, as they report, very favorable results: calomel, salts, sena, tartarized antimony, &c. being exhibited so as to produce and continue very active catharsis. But it has always appeared to us that such irritating purgation is decidedly pernicious, and that opium, so much reprobated by some, can hardly be dispensed with in the treatment of this painful malady.

During the first or inflammatory stage of the disease, tonics and stimulants are inadmissible; but when symptoms of exhaustion supervene, wine, ammonia, camphor, quinine, &c. may be resorted to and sometimes with the happiest effects. As we believe that physicians are too generally disposed to abandon their patients in despair, when such symptoms set in, the encourgement to perseverance, which Dr. Lee holds out, should not be forgotten:

"I cannot too strongly urge the necessity of continuing to employ these remedies whilst the slightest hope of recovery is entertained. I have seen several patients restored to health, where the pulse had risen to 160, and was so feeble as scarcely to be felt at the wrist, where there was constant delirium, and the most alarming prostration of strength. Recovery has even taken place, in some cases which I have observed, where the abdomen has become tympanitic, and effusion to a considerable extent taken place in the abdominal cavity. In no acute disease is it of greater consequence than in this now under consideration, that the patient should be visited by the medical attendant at short intervals, and that the effects of the remedies he prescribes should be narrowly watched."

With regard to the treatment of inflammation of the deeper-seated tissues of the uterus, viz. the absorbents, veins, or muscular structure, the symptoms from the commencement, as has already been intimated, are such as to contra-indicate the use of bloodletting. According to Dr. Lee's experience, even when the reaction has been violent, the relief obtained by venesection has only been temporary, and in some instances the abstraction of a small quantity of blood from the arm has produced alarming syncope, nor do his observations warrant the conclusion that we are in possession of any remedial means on which much reliance can be placed. The French physicians, however, have great confidence in mercury, employed so as to excite salivation. On this practice Dr. Lee thus comments:

"In several cases of uterine phlebitis, I have employed this remedy to a great extent, externally, and speedily brought the system under its influence; yet the progress of the symptoms was not arrested, and the patients died as others had done where the mercury had not been administered. In other cases I have employed mercury to a great extent, internally, without the slightest benefit; and it may justly be doubted, from the results of M. Desormeaux's practice, whether or not it possesses the influence M. Tonellé supposes, for of forty-three cases where mercury was used by him as the chief remedy, only fourteen recovered. In the latter stages of inflammation of the deeper-seated structures of the uterus, the great depression of the powers of the system renders the liberal administration of stimulants absolutely necessary, and in several cases of phlebitis the life of the patient appeared to be preserved by them."

Our author closes his observations on puerperal fever with some very judicious reflections on the prophylactic treatment, which is entitled to the closest attention at all times, seeing the formidable and too often uncontrollable character of the disease when once excited. His directions are founded

upon the proper basis for puerperal hygiene, viz. the recognition of the principle that a woman recently delivered is in a state of predisposition to inflammation of the uterus and its appendages. This will itself suggest the proper cautionary precepts, and instead of even enumerating these we prefer to dilate a little on a single one of them but slightly noticed by Dr. Lee, viz. the risk incurred by the administration of active or acrid cathartics soon after delivery. The tendency of such practice is always to awaken any latent predisposition to irritation in the uterine organs, and in many instances to excite inflammation. None but the mildest aperients should be prescribed; even these should be deferred as long after delivery as possible, and better still will it be by evacuating the bowels in the onset of labor or just before it sets in, to dispense with them altogether. We fear that on this important subject, correct views are not as generally disseminated and acted on as they ought to be, and that there is a deterioration of medical practice since the good old days of Smellie,—his "breathing sweats" and "warm caudle" being infinitely preferable to senna, scammony, aloes and colocynth.

H. M.

(*To be continued.*)

Selections from American and Foreign Journals.

Sulphate of Quinine in Enlargement of the Spleen, and in Dropsies after Agues.—Dr. Levy, physician of the Military Hospital of Val-de-Grace at Paris, has very satisfactorily shown that the dropsical effusions, which not unfrequently supervene upon long neglected agues, are most successfully treated with quinine. He alludes to the researches of MM. Bally, Nonat, Piorry, and other contemporaneous physicians, which have clearly established the superior efficacy of this remedy—to be associated in most cases with the application of the cupping instruments over the left hypocondrium—in dispersing the enlargements of the spleen which so very generally, nay almost always, accompany old intermittent fevers. Indeed, he regards this, the administration of quinine in such cases, as one of the most valuable therapeutic discoveries of recent times. Now, as the dropsical effusions are almost invariably connected with an *infarcted*—to use an old word—state of the spleen, it is a rational deduction to anticipate that the remedy, which is so decidedly efficacious against the *cause*, may not be without its influence upon the *effect*. Certain it is that the use of the ordinarily-resorted-to means, such as diuretics and purgatives, seldom succeeds in dissipating the dropsies which we are at present considering, whereas they may be often dispersed by quinine in full doses.—*Medico-Chirur. Rev., from Gaz. Medicale.*

It is rather odd that this should come to us in the guise of a new discovery. Intermittent fever is rather a rare disease in the north of France, and it is not surprising that many points connected with it should from time to time present themselves with an air of apparent novelty; to us, however, the subject is a familiar one. The engorgements of the spleen are removeable by quinine, not from any specific action

of the remedy on the local affection, but because it cures the general disease on which the enlargement depends. Hence, in most cases, topical remedies, such as cups, if the local disorder is at all inflammatory, or blisters, if chronic, add very much to the good effects of quinine.

In fact, intermittent fever is not cured when the paroxysm is for a time arrested; as long as the diseased condition of the blood continues, the mischief still persists. The best test of the continuance of the disease is the color of the skin, as indicative of an anemic state of the economy; this is not infallible, but is a tolerably sure guide. As an adjunct to the quinine, we often prescribe the freshly prepared carbonate of iron in doses of ten to twenty grains in the day. Mercurials are, on the whole, productive of much more mischief than good in this state of things, although, in the diseases of the liver dependant upon intermittent, they are often the best remedy. But, even in the latter case, they may be abused, and increase the chronic engorgement of the liver, which they are designed to correct. There is no certain test of their action, judging a priori, except that they are not suited to those cases in which the blood of the patient is deficient in red globules; they act more certainly when there is more positive evidence of inflammatory action.—*Med. Examiner, Jan.* 23.

Cold Affusion in Hooping-cough.—[The following is an abstract of Dr. Hannay's paper, on the washing of the chest with cold water in pertussis, read at the late meeting of the British Association.]

To this enlightened audience it is quite unnecessary to delineate the phenomena of the disease, or describe the various theories entertained respecting its nature. One practical fact I would bring strongly before the section, that is, the susceptibility to the impression of cold on the economy, as shown in the frequent supervention of bronchitis, pleurisy and peripneumonia, and other diseases, of which cold is the most frequent and certain exciting cause. Now, for this high sensibility to the impression of cold, no remedial measure is so likely to prove efficacious as cold washing of the chest. The efficacy of cold washing in bronchitis, of a chronic character, has been long acknowledged: and whatever may be the other pathological states (and others than mere bronchitis there must be) existing in pertussis, this one is necessarily present,

therefore cold washing *must* prove serviceable. As an invigorating or tonic power, its virtues, too, were useful in pertussis, particularly in the advance of the disease, when various forms, degrees, and extents of gastro-intestinal irritation exerted and produced impaired power of the digestive organs.

The efficacy of cold ablution in many spasmodic diseases, and amongst which there were reasons for placing pertussis, led to the belief that it proved beneficial as an antispasmodic in the cure of this disease; and the author of the memoir averred that he had derived from cold washing, on this principle, much benefit in laryngismus stridulus, decidedly a spasmodic affection. It also, when done as he directs, proves powerfully rubefacient—a class of agents which, time out of mind, have been popular in the treatment of pertussis. But it surpasses the ordinary rubefacients in fulfilling other and important indications, which none of the ordinary remedies of this class effect. It is antiphlogistic, and proves also invigorating, restoring digestion, and by its antispasmodic powers allaying the spasmodic cough. After relating some cases to show its power, the author described his mode of washing, and entreated particular attention to his method, as the only way of securing his results.

It should be done in a warm apartment. The coldest water, to which a little vinegar, alcohol, or eau de Cologne, should be added, is to be used, enveloping the hand in a towel. It is to be dipped into the epithem, and the washing speedily, very speedily, performed over the whole chest, which is to be dried with a towel, previously warmed, so that a red glow or reaction may be produced. This is to be repeated twice at least, nay, three or four times each day.

In this way the author states he has cured many cases in a few days; and in all has much shortened the duration of the disease. He is not deterred from using it *in the way he describes*, even by the existence of febrile bronchitis; and, though not very decided on this point, would not hesitate to employ it, even in cases complicated with peripneumonia. He has used it at all seasons, and in all cases; and not only with perfect impunity, but with advantage. Such is a brief outline of the author's views, which he pledged himself to publish and illustrate with cases. One or two, of a striking character, of these cases were laid before the section. One vast superiority of the remedy appeared to the author to be the possibility of getting it applied; whereas, remedies cannot easily be forced on children ill of pertussis.—*Lancet. Boston Med. and Sur. Jour., March* 3.

Traumatic Tetanus, successfully treated by Tobacco Enemas. On the evening of Friday, the 19th inst., I was requested to visit Miss C., aged 20 years, whom the messenger informed me had just been taken with cramp fits, as he expressed it, and desired me to lose no time in getting there. On my arrival, I learned that my patient had been for two or three days experiencing great pain in the right wrist, and on further inquiry I ascertained that near two years had elapsed since she had received a sprain of that wrist by the upsetting of a waggon, which at the time caused no great inconvenience, but at times since she had felt uneasiness and pain at the lower portion of the ulna. For the last three weeks the pain had been pretty constant, but not so severe until the last three days. Over the lower head of the ulna there was much tenderness, some degree of redness, and very little tumefaction.

Her history satisfied me that she had been to a considerable extent the subject of nervous irritation, as also of more or less dismenorrhœa. The pain in the wrist had become so severe during the afternoon preceding my visit, that she had consulted a physician, who ordered the application of a blister, which had been on but a short time when I arrived. The appearances presented on my approaching the bed-side, were redness of the face, general increased heat, eyes looking red and frequent escape of tears, pulse somewhat increased in force and frequency. In a very few moments a return of the spasm took place, which lasted from three to five minutes, characterized by great rigidity of the muscles, the body bending back, with a flexed condition of the forearms, fingers and toes. As the spasm went off she would exert herself powerfully, making strong and quick inspirations, and manifesting great distress and consequent exhaustion. This relaxation of the muscles was of short duration, when a return of the spasm, perhaps still more severe, would take place. After witnessing several alternations as above described, I embraced the first opportunity afforded by the subsidence of spasm, and drew blood to the amount of 20 ounces. Deglutition was somewhat difficult, but I succeeded in the administration of calomel and opium, twenty grains of the former and six of the latter. During the intervals between the spasms the powers of sensation and thought were unimpaired, and the patient appeared conscious of what took place, and would complain of excessive pain in the wrist. Neither the bleeding nor the medicine procured any sensible relief. Repeat the

opium every two hours in increased doses. Examined the wrist; vesication had taken place, removed the cuticle, and ordered the application of bread and milk poultice, with the addition of pulvis opii over the blister.

Twelve o'clock, night. Obliged to leave my patient. Ordered, at the expiration of two hours, opium and calomel, with ipecac. sufficient to nauseate the stomach.

Saturday, 9 o'clock, A. M., returned to my patient. Ascertained that the spasms had ceased after taking the opium, cal. and ipecac., which was followed by perspiration and two or three hours' sleep. The spasms had now returned in a greater degree of severity than I had yet witnessed, with evident *trismus*, which continued somewhat longer than the general contraction of the muscles of the body and limbs, causing great suffering of the patient, as was evinced by her putting her fingers to the jaws and muscles of the neck. As soon as the jaws could be separated, opium and calomel twenty grains each were given, and in a short time followed by castor oil and spts. terebinth. Complained of uneasiness at the stomach, which was followed by vomiting the oil and terpentine. Spasms growing worse, causing great curvature of the body, bending it backwards in the form of an arch.

At this stage of the case, 12 o'clock, M., and about 18 hours from the commencement of the spasms, I resolved on trying the tobacco enema, for which purpose about the third part of a threepenny paper of cut tobacco to one pint of boiling water was ordered, and of this infusion take the one-third for an enema. Five minutes having elapsed, patient begins to be much prostrated, coolness of the surface, and profuse perspiration breaking out; great relaxation of all the muscles, and jaws becoming loosed. In twenty minutes muscles very much relaxed; a feeling of extreme nausea with some vomiting. A great change is perceptible in the countenance; from fulness and redness, it has now become pale and contracted, and the whole body and limbs covered with perspiration. One hour and fifteen minutes having passed since the tobacco was given, more redness and heat of surface become apparent; pulse increasing in force and frequency, with some twitching of the eyelids, and a starting of tears. Spasms return, though not as violent. Two or three follow in quick succession. Repeat the tobacco enema, same quantity as before, which is followed by similar effect. Now obliged to leave my patient for a few hours, and ordered a repetition of the enama every hour.

Seven o'clock, P. M. She has taken the tobacco six times.

No return of the spasms unless the enema was omitted too long. I find that the tobacco is beginning to have a more specific effect; sickness and prostration more severe, with an increase of the vomiting. I also consider the tendency to spasm as being much diminished. Reduce the strength of the enema, and give the same at intervals of two hours, unless sooner required by the condition of the patient. The bowels have moved twice. She complains less of the wrist. Repeat the poultice every four hours, covering the same with moistened, cut tobacco.

Saturday, 6 o'clock, A. M. Patient got some rest during the night. Considerable feverish action; mouth and tongue dry; complains of distress at the stomach. The jaws were set once during the night, but gave way after the administration of the tobacco. Give the *pulvis antimonialis* once in four hours, alternating with *spts. nit. dulcis*, and drinks of slippery elm, &c.

Six o'clock, P. M. Has had no spasm during the day, and has not taken any of the *weed*. Some tendency to twitching of the muscles when she falls asleep. Give four grs. of the pulvis Doveri, combined with camphor, once in four hours.

Monday, 7 o'cloc', A. M. Rested well during the night; tongue moist, and all appearances highly favorable.

Tuesday. She has been dressed and is sitting up. Feels no pain in the wrist, and complains of nothing except feeling somewhat weak.

Thursday. I consider my patient cured, her appetite having returned, and the wrist being free from pain.

B. E. Bowen.

Mexico, Oswego co., N. Y., Feb. 27, 1841.

Boston Med. and Surg. Jour., March 17.

Irritation of a Branch of the Trigeminus Nerve at its central extremity. By Dr. Budge, of Altenkirchen. — A peasant woman, forty-six years old, was affected for the first time in her sixth year with a severe periodical pain over the right eye, for which she could ascribe no other cause than exposure to cold and damp one winter's day. Previously she had always been healthy, and her parents attained a very advanced age. The pain continued from her sixth to her twelfth year, recurring about every fortnight, lasting from twenty-four to thirty hours each time, and then leaving her again well and hearty. When she was twelve

years old it ceased; and during the next twelve years never once returned. In the interval she commenced and regularly continued menstruating. But at the end of this time when twenty-four years old, she had a child, and eight days after delivery her old pain returned; from that time, now twenty-two years ago, she has never been a week without it.

The pain usually begins at midnight, awakening the patient from sleep, and lasts to the same time in the second night following, i. e. for about forty-eight hours, It is preceded and accompanied by chilliness, which at last terminating in sweat, indicates the approach of the end of the attack. The pain extends from the lamdoidal suture of the right side, and is most severe at the posterior and anterior surfaces of the upper eyelid, about half an inch above the brow, and a short distance below the eye of the same side. It is a stabbing pain, and so intense that the mere thought of it fills the patient with horror; it continues uninterruptedly through the whole period, and shortly before it ceases attains an indescribable severity. The slightest touch excites intense agony in the affected part. The immediate neighborhood and all the rest of the face are as to sensation perfectly natural; but the features on the right side are less marked than on the left side of the face. The cornea (during the pain) is rather turbid, and the eye is filled with tears, the sclerotica is reddened, and the vessels of the conjuctiva turgid; the tarsi are also swollen and red. The whole eye is turned outwards, so that the cornea is nearly hidden; and the patient can with difficulty look straigt forward with it, partly from loss of power over it, and partly because the straight position, if retained but for a few instants, excites giddiness and vomiting.

Soon after the commencement of the pain, giddiness comes on, and compels the patient to keep her bed; it increases with the pain, and usually lasts a day longer than it does. The patient is at the same time constantly tormented by sickness and vomiting of food, mucus, and bile. Her tongue is quite clean and her bowels regular, but she has no appetite. The organs of the abdomen and chest and the pulse are in a normal condition.

The first and second cervical vertebræ are a little sensitive on pressure, and from the third to the second dorsal there is extreme sensibility, especially over the third, fourth, fifth, and sixth cervical. As often as these are struck the patient flinches and complains of pain in the right eye, and immediately after vomits. The right arm also which sometimes

moves spontaneously when the pain is very intense, is sometimes convulsed when these vertebræ are pressed.

When the paroxysm is about to cease, the intensity of the pain, the squinting and the giddiness decrease, and soon after a general sweat comes on. At the last the patient sneezes once or twice (and always, she says, through the right nostril) and then, except for the giddiness, which lasts a day longer, the disease is for the time removed. Every fresh attack, however, is severer than the preceding, in respect both of the pain and of the squinting. The paroxysms are rarer in the summer than in the winter and spring; mental anxiety and passion accelerate and aggravate them, but neither menstruation nor pregnancy has any influence on them.

In the intervals between the attacks of pain, there is no external appearance of illness whatever, except a slight outward squint; and, but for the influence of pressure on the spine, the woman might be deemed perfectly healthy. By this, however, though there is never any spontaneous pain in the back, all the signs of the disease may be in a slight degree voluntarily reproduced; as soon as the lower cervical vertebræ are pressed, the patient complains of the pain of her eye and head, the right eye turns outwards, tears flow into it, and sickness or even vomiting comes on. And again, all these phenomena cease as soon as the pressure is remitted.

Of the above singular symptoms, the author offers the following explanations:

The first and most important, the pain over the right eye, is evidently the result of a state of irritation of the majority of the fibres of the frontal branch of the trigeminus, whose exact course it follows; for the patient says that the pain is not in the eye itself, but passes above it from behind forwards, and extends upwards and a little inwards towards the nose. The pain in the back further shows that the exact seat of this irritation is the central extremity of the nerve, of which, as is well known, the roots have been traced to the region of the third and fourth cervical vertebræ and probably go down still lower. Immediately over this part, the patient has pain on pressure: and by it the pain in the eye may be produced and increased at will, although, except during the paroxysms, no more pain is excited by pressure on the right than by that on the left eye.

The pain in the other adjacent vertebræ probably results both from the stimulus of pressure on the extremities of the nerves over them, which from their proximity to the nervous centre are especially liable to exalted excitability, and from

the immediate effects of the pressure on the membranes which are themselves excited and sensitive in an unnatural degree.

The drawing of the eye outwards is the result of an influence on the sixth nerve; an influence reflected from the sensitive nerves. It is not probable that the central ends of the fibres of the sixth are directly irritated; for if that were the case, the same extremities of the other nervous fibres that lie between the sixth and the fifth would most likely be also irritated, and the morbid phenomena would be more extensive. The twitchings of the right arm may also in like manner be regarded as reflex motions.

The organic alterations in the eye must be considered as signs of the excitement of the trigeminus; and as when a sensitive nerve is divided, nutrition is materially impaired, and the part it supplies undergoes a kind of maceration, so when one is irritated the same part is inflamed.

The giddiness is thus explicable; fibres of the trigeminus may be traced into the crura cerebelli ad frontem, near the spot from which the nerve comes out, and as Magedie has shown that when these crura are divided, the balance of the body seems to be lost, it is clear how an irritation of the trigeminus induces giddiness, and how that symptom is most marked when the signs of irritation are passing off or gone.

The vomiting is explained partly by the affection of the spinal cord and partly by the influence of the nerves on the sight. (In explanation of this the author refers to his own investigations on vomitings recently published.)

The shivering is the result of the stimulus of the central extremities of the sensitive nerves in the spinal cord; and it is comparable with the results of several of the author's experiments, in which he has observed that on exposing the spinal cord in a dog or other animal, and gently stroking it with a feather, all the characters of a shivering fit are immediately produced. In this, as in all other cases, the condition of the central extremity of the nervous fibre is felt as if it were that of its peripheral extremity.

The sneezing at the end of the paroxysms probably results from the nasal branch of the trigeminus becoming involved in the excitement when the irritation of the frontal is at its greatest height. The excitement is in this case also probably communicated in the nervous centre, though felt where the fibres are distributed; and it is communicated not to the sensitive nerves alone, but by reflex action to the nerves of the respiratory muscles.

The author, believing that the esential cause of the symptoms was a congestion of the vessels of the frontal nerve, had ten cupping-glasses applied every eight days near the vertebræ at which pain was produced by pressure; these were applied three times; mercurial ointment was rubbed in morning and evening, and four grains of sulphate of quinine with two of extr. nuscis vomicæ were given in two doses every day. Their result was most strking; the patient, who had for twenty-two years been entirely unrelieved by a variety of methods of treatment, had no severe attack after this was employed; after several months had elapsed, she continued well, and even the divergence of the right eye was in some degree lessened.—*Brit. and For. Rev., from Casper's Wochenschrift. Oct.* 3, 1840.—*Med. Examiner, Feb.* 27, 1841.

A Case of Posthumous Variola. By Dr. Chansarel.—A girl, aged 5 years and 8 months, who had been vaccinated, was suddenly attacked, when in perfect health, with a varioloid eruption and fever. About twelve hours afterwards, the redness of the skin and the pimples totally disappeared, cerebral phenomena supervened, and death twenty-six hours after the first appearance of illness. On the next day, thirteen hours after death, "I saw," says M. Chansarel, "to my great astonishment, a great number of pimples which had appeared after death, and which were much more developed than those I had seen during the life of the child. They were seated on the face, neck, chest, and buttocks; those in the latter region being larger, equalling the size of a lentil. They had the aspect of variolous pustules, surrounded by a red areola, depressed in their centre, and contained a small quantity of fluid. The body exhaled a fetid odour, and exhibited some red and livid spots, putrefaction not having been so slow as it appeared."—*Ibid., from Bulletin Medical du Midi. Juin, Juillet*, 1840. *Ibid.*

THE WESTERN JOURNAL.

Vol. III.—No. IV.

LOUISVILLE, APRIL 1, 1841.

MEDICINE IN DUBLIN. BY M. L. LINTON, M. D.

Dear Sir: I propose in the present letter some account of Medicine and Medical men in the Irish capital, which abounds more than any other city in Europe, of its size, in Hospitals, learned professors, and the other various requisites for medical instruction and improvement.

There are about twenty Hospitals in Dublin, of which the following are the principal: the Meath Hospital, the Richmond, Hardwick, and Whitworth Hospitals, Steven's Hospital, the Lying-in, Dean Swift's, Sir Patrick Dun's, a foundling establishment and a refuge for the incurable. I attended the Meath Hospital frequently. Drs. Graves and Stokes are principal physicians—they attend alternately. It was during the term of Dr. Stokes that my visits were made. Dr. Stokes is too well known both in Europe and America, to render it necessary that I should say any thing of him as a pathologist and therapeutician. He treated me with the utmost kindness—showed me all his cases—gave me his views of their pathology, and a plain account of his mode of treating them, with such other general views as he supposed would be interesting. Such attention as this, however, may be expected of the profession in general in Dublin, by any American physician, or perhaps I should say, by any visiting physician.

The prevailing disease in his wards was Typhus Fever. This, Dr.

Stokes considers, in opposition to Louis and the French pathologists generally, an essential or idiopathic disease not referable to any local lesion. He regards it as a disease which naturally tends to spontaneous resolution or cure, but which in its progress greatly exhausts the vital powers. Hence, his treatment is of a sustaining character, regardless, in a great degree, of the local irritations by which the disease is often complicated. Concomitantly with the wine, (for this is the stimulant principally used) he employs blistering, cupping and other revulsives, and evacuants, according to the local indications. He has lately instituted a series of experiments and observations on the effects of wine in typhus. He generally commenced its administration early, and continued it liberally, often giving as much as twenty-four ounces per diem.; the result has been eminently satisfactory, nearly all the patients having recovered. It is a general rule to which the Doctor subscribes, that when the pulse becomes slower and fuller, after the use of the wine, its utility and further administration are indicated. This rule applies as well, however, to other febrile diseases as to typhus. The Doctor has sought for another rule founded on the state of the heart. It is a fact, says he, that in some cases the heart acts violently when the pulse is very weak, and the converse, viz., that the heart is frequently found to act very feebly without a corresponding weakness of pulse. Now, it is in this latter condition, when the first sound of the heart is almost inaudible, and its corresponding impulse (the contraction of the ventricles) almost or quite imperceptible, that the use of wine, in liberal quantities, has been followed by the most remarkable success, restoring the sounds and impulses of the heart, and bringing the pulse into harmony with them—a condition quickly followed by convalescence. In opposite cases, in which the action of the heart is violent, the wine is not indicated, and if given, will aggravate the symptoms. The rule is to wait until the heart subsides to the point alluded to, and then commence the wine. Indeed, in most cases, the heart acts violently *at first*, but it *most generally* succumbs in a few days, and it should be closely watched in order that the wine may be brought to its aid, as soon as it gives signs of exhaustion. Wine was not the only sustaining agent relied on in these experiments—soups of a nutritious quality, were also resorted to, and in the latter stages of extremely bad cases, opium, musk, and ether were called in as adjuvants. This rule is perfectly practicable even by the tyro in Medicine, any one can estimate the sounds and impulses of the heart, and if it is as infallable as Dr. S. thinks it is, it is an invaluable addition to the science and art of healing. Dr. S. has observed in many cases the follicular ulcerations or dothinenteritis of the French, but he does not regard this condition of the intestines necessary to the constitution of the disease, as do most continental writers. I have already

remarked that he regards it as an essential malady, and one that greatly exhausts the powers of the system. His object in the administration of wine is to sustain nature until she can rid the system of the disease, or, in other words, to use his own language, "*to cure the patient by keeping him from dying!*" Or, to select another set of words, to express the same idea, "to prevent the system from succumbing until the disease passes through its stages and subsides in virtue of the laws by which it is governed. It is a remark of Dr. Graves, that he wishes inscribed on his tomb the fact that he '*feeds fever*.' These doctrines differ scarcely at all from those which the Father of Medicine taught more than two thousand years ago, and yet Drs. Graves and Stokes are not one step behind the march of modern medicine. I state on the authority of the latter, that the debilitated state of the heart already alluded to in Typhus, is connected with a softened condition of that organ. Amongst the interesting cases in the medical wards, I saw a case of aortal aneurism; in this case Dr. S. informed me that he found generous feeding much better than rigid dieting.

The means which he uses in the treatment of paralysis are strychnine and electro-puncturation, with the kind of regimen which the circumstances of each individual case demands. In neuralgia the preparations of iron and the narcotic vegetable extracts seem to be his favorite remedies.

A host of eminent surgeons attend the Richmond Hospital; amongst whom I may mention Carmichael, O'Bierne, Adams, and M'Donnell; most of them are well known as authors. I saw Mr. Adams operate several times for club-foot, and once for wry neck. In the former, only the tendo achilles was divided, though they were cases in which the Parisians would have, in addition, divided other tendons. Mr. A. remarked that in fractures where the reunion of the bones was tardy, slight mercurialization would often bring it about. I should suppose that such might be the fact in cases in which there was a pre-existent syphilitic taint. He also showed me a case which he called '*mental syphilis*.' The patient labored under the melancholy belief, that the syphilitic virus was incorporated with his very being, when in truth he was entirely cured. This is not an uncommon sequent of that wretched disease; and every practitioner has observed it, but they are indebted to Mr. Adams for its name. Though I reluctantly yield the palm, for Dr. Polin and myself called a similar case "*clap of the conscience*," many years ago!!

Lepra vulgaris has been treated successfully in this Hospital by small but gradually increased doses of the tinctura lyttæ, and repeated small bleedings. For Cirsocele the ablation of a part of the scrotum is a common remedy. This operation, which is quite safe and simple, converts

the scrotum into a first-rate suspensory bandage. I have understood that Dr. Richardson, of Louisville, has resorted to it with success in at least one of his cases.

The Whitworth Hospital is devoted to chronic diseases. Indeed nearly all the cases were pulmonary consumption. I had not thought that phthisis was so prevalent in Ireland. But when the coldness and dampness of the climate is considered, as well as the destitution of all the comforts of life under which the poorer class labor, the fact of its prevalence is not at all surprising. Typhus fever and conpsumption are the scourges of the houseless, half clad, and half starved poor of oppressed Ireland.

The Hardwick is a Fever Hospital—most of the cases were Typhus. Upon inquiry I found that the treatment was 'expectant,' little being used but the spts. mindereri, with counter irritation, &c. for local symptoms, and wine for the latter stage of the disease. This was the treatment of Sr Philip Crampton, who is celebrated for his success in Typhus.

Stephen's Hospital is perhaps the most extensive in Dublin.—Cusack and Colles are the principal surgeons; Sir Henry Marsh is one of the physicians. It was here that I first saw the operation for strabismus. The obliquity was extreme and the operation did not succeed well. I saw the patient on the day after, in company with Mr. Cusack, who was the operator, and he regarded it as a failure. It was Mr. Colles' opinion that, after the operation, the healthy eye should be kept covered, in order that the consequently increased necessity for action on the part of the diseased one, should assist in rectifying its axis. This notion was acted upon but without effect.

I saw in this Hospital a great many cases of diseased bones, especially hip joint diseases, but could learn nothing in addition to what is generally known of their treatment. What do you do in such cases, asked I of Mr. Cusack. "What can we do?" was his laconic and honest reply. It is generally known that Mr. O'Bierne has succeeded in curing this disease in its *early stages*, by mercurialization. Cusack and Colles stand at the head of the surgical corps in Dublin. I have some personal acquaintance with the former, and should I hereafter meet with anything from his pen in favor of any method of treating disease, I should attribute to it more than ordinary weight. He writes but little, "because," says he, "my experience furnishes evidence for and against most of the methods of treating all diseases. Most medical men," said he, "publish only their favorable cases." In walking the wards with him, I saw several cases of puerperal fever. Upon enquiry I found that they had been brought from the Lying-in Hospital, in Sackvelle street, on account of a puerperal epidemic that was raging there at the time, and depopulating the entire establisment. I remarked, that according to my reading, but

few women died of that disease, in the Lying-in Hospital, under the able supervision of Drs. Collins and Kenneday. "Ah," replied he, "these are the unpublished cases." The Lying-in Hospital alluded to, is the finest and most fashionably situated asylum in the city. I visited its wards, but one-half of the few that inhabited them were dying with puerperal fever. The treatment in general, venesect., counter irritation, and mercurials. In the present epidemic nothing seemed of any avail.

There are not less than ten faculties in Dublin, nor are these the only organs of oral instruction. Lectures are delivered at all the Hospitals, on medicine and surgery; and when the number of faculties, Hospitals and eminently distinguished anatomists, pathologists, and therapeuticians are considered, the assertion that the Irish Metropolis is second only to the French as a medical school, will not be contested.

I shall here close my remarks on the Dublin school. I might go on with a notice of the remaining Hospitals, and of the various faculties, but it would be of no practical utility. I shall devote the space that remains of this letter, to a few remarks on the Edinburgh and Glasgow schools.

As a medical school, Edinburgh stands deservedly as high as it ever did, and why should it not? when were there more learned professors in its faculty than Sir C. Bell, Christison, Hamilton, Syme, and the present Munro? Other schools have surpassed it, but it has not declined in merit. It is as great as ever *absolutely*, but not *relatively*.

Sir C. Bell was absent, on a visit to the continent, when I was there, but I had the pleasure of following the clinical professor of surgery, Mr. Syme, through the wards of the Royal Infirmary. He had just performed the operation for strabismus, with success. He was then treating some cases of urethral stricture, by the frequent introduction of a metalic sound, his object being to irritate the strictured part, and thus cause its ulceration or rather ulcerative absorption. I suppose it was on the principle, that what is caused by irritation, may be cured by irritating. I saw, also, some cases of gangrene of the extremities. (Gangrena senilis.) These cases were treated by rigid dieting, and the antiphlogistic regimen in every respect. "This treatment comports," said Syme, "with the low degree of vitality in the parts, and if you stimulate them to a higher action, sloughing will ensue." On the same principle, I suppose, that an ordinary degree of heat would cause the loss of a frozen limb.

Amongst the lecturers that I heard in Edingburgh was Dr. Traill. He attributed the first use of the stomach pump in cases of poisoning to "Dr. Physick of America." The Royal Infirmary is the principal Hospital of Edinburgh. It is within fifty paces of the University buildings. The

number of students, at present, in all the dapartments of the University is about 1,400.

The Glasgow school, also, possesscs all the advantages which good Hospitals and learned faculties can bestow. Amongst the cases which I saw in the Royal Infirmary of that city, I will mention three. In two of them the skull had been extensively fractured and driven in, the operation of trephining was performed on both, and in both cerebral hernia supervened—in one case as large as a pigeon's egg, and in the other as large as the firt—in the former the patient recovered—in the latter there was paralysis of the side opposite that of the cerebral lesion, when I last heard from him, (three weeks after the operation.) In the third case, the foot and ankle had been crushed by a waggon wheel; upon consultation it was resolved to attempt saving the limb, but traumatic gangrene soon made its appearance—extended to the body, and the patient died, 'maugre,' deep scarifications, blisters and poultices.

March, 1841.

AXILLARY ANEURISM.

The individual upon whom Professor Gross performed the operation of taking up the subclavian artery, on the 11th of February, died on the thirty-first day after the operation. The ligature came away on the fourteenth day, and the wound had entirely healed, without any bad symptoms.

A post-mortem examination revealed, as was expected, a perforation of the paries of the thorax, immediately contiguous to the aneurismal tumour, with a discharge of the contents of the sac into that cavity, and the necessary consequence of fatal pleuritis. The operation in itself was found to be perfectly successful; the artery being entirely obliterated at the point at which it was tied.

A full report of the case, together with a history of this operation, and some observations on the surgical anatomy of the parts, may be expected in an early number of the Journal.

DEATH OF SIR ASTLEY COOPER.

A London correspondent of a New York paper, under date of March 3d, mentions the death of Sir Astley Cooper, which occurred on the 12th of February. A more lengthy notice of him, and his works, may be expected shortly.

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THE

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OF

MEDICINE AND SURGERY.

MAY, 1841.

ART. I.—*A Memoir on Obliteration of the Bronchiæ: By* A. C. REYNAUD, M. D., formerly resident in the Hospital; late Chief of Clinical Medicine of the Paris Faculty; Physician at Puy, &c. Translated for the Western Journal of Medicine and Surgery: By JOHN A. WARDER, M. D., of Cincinnati.

(CONCLUDED.)

State of the neighboring Bloodvessels.

The bloodvessels were not found closed, except where an extreme dilatation of the bronchiæ had preceded their obliteration: by insufflation, indeed, we were able to follow them as great a distance as in a sound lung, but this was not the case with the vessels that accompany the terminal fibrinous branches of the obliterated bronchiæ; air could not be forced into them, and the absence of circulation was indicated by their black color and hair-like appearance. It may be here mentioned, that the filaments of the obliterated bronchiæ, as well as their terminal enlargements, were generally of a

dark, black color,—which may be owing to the discoloration of the solid particles of blood after the circulation has ceased, and is the same observed in so many chronic alterations of the lungs, especially at their summit.

Our researches have not been directed to the nerves and absorbents of the lungs, in these cases; for their exceeding delicacy prevents our following their branches distinctly, into the altered parts of the organ.

State of the Cellular Tissue.

A remarkable appearance was observed where the last filaments of an obliterated bronchia terminated: as elsewhere, when parts become atrophied or diminished in volume, this tissue tends to occupy their place, so here it keeps apart the bronchial ramifications, which, when distended with air, constituted the whole pulmonary fabric. Thus the various elements of the primitive structure of the organ, may be very distinctly observed, not merely from their peculiar form and isolation, but also by their black color, which contrasts strongly with the greyish hue of the cellular tissue. This substance was also much softer than other parts, and drawing slightly upon one of the trunks of the terminal filaments, we perceived a number of furrows, caused by the pressure on an unresisting substance, like those seen in dissecting the final ramifications of the nerves, when the eye has lost sight of them, they are again brought into view by exerting a slight traction on their trunks. As it was more readily torn than the fibrous threads, the cellular tissue could be easily removed by scraping with the handle of the scalpel, while the ultimate bronchial and vascular filaments were so exposed that they could be seen floating under water, or in the current of air from a small blow-pipe.

Causes of Obliteration.

With our views of the physiological properties of the mucous membranes, and their slight tendency to form adhesions, we are surprised to find the bronchiæ so often obliterated: indeed, we may suppose that their lining membrane, and especially that part of it which performs the physiological act of respiration, differs from the other mucous membranes, as it is much thinner and more pellucid than the layer which lines the commencement of the air passages, and the digestive tubes: mere continuity does not appear to me sufficient proof of an identity of character.

In the smaller bronchiæ we find neither villosities nor follicles, and their natural secretion is serous, not mucous. We know that certain pathological conditions, such as continued inflammation, will develope the structure of mucous membranes, and that products, analagous to those of mucous surfaces, are frequently observed: but, the pathological condition has great power of transformation—a serous cyst, whose natural function was to secrete an aqueous fluid, may be converted into a mucous cavity capable of secreting mucous, or pus; and in the same manner all the organs, with any given organization, may give rise to tissues or organic products of different characters.

Besides, the lining membranes of the air passages is much more frequently affected with adhesive inflammation than the ordinary mucous tissues; and I have reason to believe that the bronchial extremities are frequently in an analagous condition. I have found many cases of acute pneumonia with hepatization, where the inflammation had resulted in false membranes in all the lesser bronchiæ, filling their cavities

more or less completely, and leaving the surrounding parts untouched.

If to these data, based upon the pathological characters which belong especially to the serous membranes and the internal coats of vessels, we add the fact of the frequent obliterations of bronchiæ, of vessels of serous cavities, we shall have some reason to suppose that among these several parts, there is as complete an identity as their various functions will admit. If this analogy be well founded, we may conclude, *a priori*, that inflammation of the bronchiæ, especially the small ones, may cause their obliteration in the same way that a blood vessel is occluded by a corresponding attack of inflammation:—the following fact will place this obliterating influence of inflammation beyond a doubt:

A man aged about twenty-five, was attacked with smallpox; the eruption had run its ordinary course, the scabs were detached, leaving scars on the face, when a pneumo-thorax of the right lung ensued. Its presence was indicated during life, by extreme dyspnœa, a remarkable dilatation of the affected side, and a greater ressonance than natural. The patient was much emaciated and had a cough, but M. C. A. Louis did not suspect the presence of phthisis except from the perforation of the pleura. The patient soon died suddenly; a considerable amount of air was found in the right pulmonary cavity, the lung was pressed closely against the vertebral column and retained there by soft, recent false membranes: a perforation of the pleura, leading to a collection of pus, existed at the base of the organ. There were many enlargements on the surface, and a number of little tumous were perceptible on the touch, conveying the sensation transmitted by a lung impacted with tuburcles: indeed tumours were found within the organ, but though apparently tuburcu-

ar, they had an unusual aspect. A careful dissection of the small bronchiæ showed them to be very red, further along their surface was covered with a slight layer of lymph, and beyond this, their cavity was filled with the same matter, up to their final terminations which appeared granulated. The accompanying blood vessels were black as charcoal, while the pulmonary parenchyma appeared, up to the limits of the alteration, of a marked reddish brown. Neither induration nor the semi-transparent grey infiltration were observed. At the same time, little cavities filled with pus, existed throughout the organ, as numerous at the base as at the superior portion. At the summit, one of these cavities was larger than the rest, and filled with what appeared laudable pus—it was lined with a yellowish white membrane half a line thick, separating it from the lung which was of a reddish brown for half a line, beyond which it was of the natural rosy hue and entirely exempt from tuburcles. A bronchia of considerable size, larger than natural, thickened and of a bright red, ran towards this cavity, but did not enter it; indeed the membrane above mentioned, extended into the tube for six or seven lines, forming a firm layer that was readily detached from the bronchial membrane. This plastic matter had the same characters as that contained in the little bronchiæ, which, by their union, formed the tuburculous looking masses which we had observed. I shall not here insist upon the difference between this lung and those affected with tuburcle; suffice it to say, it was striking, though, without a careful examination, the distinctive characters could not be precisely defined.

The purulent sac appeared to be nothing more than an abscess: the matter in it was true pus, perfectly thickened, destitute of tuburculous clots or detritus. The soft, white, un-

organized substance which lined the cavity, was precisely like that found in an abscess in the parenchyma of an organ: neither induration, tuburcular granulations, nor the semi-transparent grey infiltration were found around it—a red inflammatory circle was all that separated the sound from the diseased portions. Finally, the prolongation of this false membrane into the bronchiæ, manifestly inflamed, but not ulcerated, conclusively demonstrated both its characters and nature.

Had the patient survived, what would have become of this abscess? Would the pus have found exit; would the oblit erated bronchiæ have been rendered permeable by the absorption of the plastic matter; or would the obstruction have remained permanent, and the abscess have become encysted? I shall not here discuss these questions, as the case was merely introduced to prove that obliteration may occur from false membranes, produced by evident inflammatory action.

It will be readily conceived that the bronchiæ should be obliterated when the circulation of air is obstructed, as is observed in an artery from which the blood has been excluded. But in the arrangement of the bronchiæ there is no anastomosing between the branches, so that where an obstacle exists, all the further portion of the tube must become impermeable: this cessation of the influx and efflux of air, which constitutes the circulation in the bronchiæ, may be followed by the entire absorption of the air contained at the moment of obliteration, when the shrinking of the walls upon themselves with consequent adhesion, aided by pressure of the surrounded parts, will ensue. That the air contained in a lung may be thus absorbed, after its escape is prevented, will be incontestibly proved by a fact to be mentioned in this memoir; though we do not consider it demonstrated that the

obliteration of several branches will result from an obstruction at first limited to a point in the trunk whence they arise. Hoping to throw some light upon this difficult point we shall cite the following case, which is, besides, a remarkable form of the lesion. In the body of a female who died under the care of M. Louis at La Pitiè, I found one of the lungs presented these characters: The principal bronchiæ of the superior lobe, five lines in diameter, was obliterated a little more than two inches from its origin; instead of being a solid cord beyond the obliteration, it was dilated into an oval sac and filled with a semi-fluid, yellowish white substance somewhat like tuberculous matter mixed with mucous. At some distance, the subdivisions were obliterated a few lines from their origin, and degenerated into fibrous cords that were again divided into solid threads terminating near the pleura.

Below the obliteration of this bronchia, we could nowhere see any of the little orifices leading into the secondary branches, but in their stead were imperforate circular depressions. From the exterior surface, at all the corresponding points, solid fibrous cords could be traced far into the substance of the lung. Two of these cicatrices only could be perforated by a pin; the higher of these opened into a fusiform portion of a bronchia about twelve lines long, and four in diameter at its largest part. From its extremity started three little ramifications, which were soon obliterated. This cavity contained no foreign matter and was permeable to air.

The second opening was much lower and led into a fusiform cavity of considerable diameter. From its proximal extremity several branches were given off, with natural calibre, and permeable to the air, even to their vesicles; others were funnel-shaped, forming a cul-de-sac, and continued as solid fibrous cords: one of them, obliterated four lines from

its origin, instead of being continued as a solid cord, had its cavity reproduced and considerably dilated for eight lines in extent, and again obliterated in all its branches; this last cavity was filled with matter similar to that above described.

Let us observe the connexion between these changes and how some may induce others: it is very probable that the starting point existed in the first bronchia, and that the primitive alteration was a contraction, whence resulted the obliteration of a great many orifices leading into the bronchiæ. We cannot indeed admit that the orifices were closed in consequence of the obliteration of these bronchiæ, since we find the same occlusion at the origin of a branch which is very much dilated and filled with a peculiar matter. On the other hand we find two of these orifices in progress of obliteration, scarcely admitting the point of a pin, but each opening into a dilated bronchial cavity and permeable to air. We cannot admit that the obliteration of these tubes was the cause of the occlusion of their openings into the principal bronchia. But if we admit that this contraction of the orifices was primary, it will be easily conceived how, before it ended in complete occlusion, it might have induced the dilatation of the tubes—by opposing a barrier to the escape of the air at each expiratory effort. When the occlusion was effected, the dilated cavity must needs appear to be a sac, in which the products of secretion must collect, and the final ramifications would be obliterated when the contained air was absorbed. According to this view of the facts, the final degree of obliteration should be the closure of these dilated trunks—after the gradual absorption of the secreted matters. Indeed we have reason to believe this is effected, and that it is by the same process that in some rare cases, tuberculous cavities seem to become cured, or cicatrized. These interpretations are given as conjectural,

they have not warped our judgment in observing facts: in this as in all other cases, precision has been our chief ambition.

When speaking of the lesions of the lung that frequently accompany this affection, I said that we often observed it contemporaneously with tubercular disease. We frequently find, in different parts of the lungs of phthisical subjects, but especially near the summits, encysted or free masses, of a tubercular aspect, resembling calcareous matter diluted with water, or like dry chalk: these are of various size and consistence, some as large as a pea, others the size of a nut, and often, when at the summit, accompanied by a remarkable crimpling of the external surface. In almost all cases of this kind which we have carefully examined, the bronchiæ running to these altered portions of the organ were obliterated to some extent.

We shall cite a remarkable example: At the summit of one of the lungs of a female who died at La Pitié, from a cerebral attack, there existed a marked crimpling of the pleura, and at the corresponding part of the lung, was a cavity with firm greyish walls a quarter of a line thick, as large as a nut, and filled with matter resembling moistened plaster. The side of this cavity next the root of the lung was funnel-shaped, the cul-de-sac terminating in a fibrinous band the size of a crow quill, and this was the continuation of a considerable bronchial branch running in that direction and obliterated rather more than half an inch from the cavity: many neighboring bronchiæ were obliterated. Near the root of the lung there was a little fibrinous cord which arose from a large bronchia, and soon terminated in a cavity the size of a kidney-bean, which contained matter similar to that at the summit of the lung.

In a second case, there was a cavity at the centre of the inferior lobe of one of the lungs, the size of a very small filbert, with fibrinous walls, filled with old tubercular matter. A bronchia ran towards, but was obliterated within two lines of it: within a short distance of its insertion and running in the same direction, was another bronchia that was dilated, and filled, nearly to the surface of the lung, with matter, similar to that in the cavity. The walls of this tube were thickened, the internal surface white and fibrinous. The branches were oblitered some lines from the periphery of the lung and formed solid cords. This individual had been phthisical, and we found tubercles, both crude and softened. Whatever we may suppose to have been the nature of the primary alteration that caused this cavity and collection of matter, it appears evident, that having no exit in the natural direction, the tube being obliterated, the matter flowed into another branch, perhaps the continuation of the first, and caused its distension to so remarkable a degree.

It might perhaps have sufficed to have described this species of obliteration, and its connection with the alteration of the lung just mentioned, but we should investigate the cause of this lesion, and this discussion requires us to make some observations on the nature of these accidental matters contained within the pulmonary tissue. It is ever difficult to ascertain the origin and nature of any organic lesion, when we can only see the final results, and when the primary characters have been long effaced. Anatomy, when deprived of the aid of symptomatology, must depend upon its own discoveries. To recognize the more or less frequent coincidence of one lesion with another, to define their points of contact, to seek out carefully all their degrees, in order to observe the different points of relation, and connexion, are the only means

of induction which we are allowed to employ. These chalky masses and collections of calcareous matter, resembling partially dried tubercles, are frequently found in phthisical lungs, especially in advanced age. Still, they are frequently found without this disease of the bronchiæ, and, during a year spent in the Hospice de la Vieillesse, we were struck with the frequency of this alteration of the lungs. My old colleague and friend Dr. Secrétain, who was simultaneously engaged in another department, has made the same remark in his inaugural thesis.

This alteration was generally found in the summit of the lungs, while they, at the same time presented externally, considerable puckering; the neighboring pulmonary tissue was somewhat black, indurated, and connected by adhesions to the thoracic cavity. This accidental matter was always contained in a kind of sac, the walls of which were thickened, somewhat smooth internally and apparently fibrous, and colored to some extent by the black pulmonary substance.

The contents presented various appearances, sometimes resembling tubercular matter, only drier and more friable: at others, looking like the detritus of tubercular matter mixed with water, not with a purulent liquid as is seen in recent tubercular cavities. They often resembled moist plaster, or were quite dry and very friable, easily crumbling under the finger, or more dense, like a piece of chalk, and resisting the edge of the scalpel. It was not uncommon to find, in the midst of this substance, still harder portions, which were quite calcareous or sileceous. The color was not always of a uniform yellow, but often spotted with little black dots, or traversed by black lines. It was then evident that a portion of organized tissue entered into its composition. We once traced a number of bronchial branches into one of these cal-

careous masses, they were of a deep black, and after dividing several times terminated in their final twigs of the same color. In this as in analogous cases the matter adhered to the cyst, so that it was difficult to separate it.

Should we attempt, with a knowledge of the characters we have assigned to this chronic alteration of the lung, to trace out its origin, and indicate the kind of acute lesion to which it corresponds, we shall certainly conclude that it arose from an abscess, or from the softening of a mass of tubercles; most probably the latter, which is more frequent. Tubercles may exist in a limited portion of the lung, and their softening produce the morbid fluid contained in the cavity. We have remarked the frequent coindence of the two affections. Caverns, like the cysts or calcareous deposits, are most frequently situated at the summits of the lung—the slight difference in the structure of their walls may be explained by their various duration: in both cases, we generally find adhesions or other morbid lesions at the summit of the lungs, indicating previous inflammatory action.

The contained matter of both sometimes occur together, and they approximate each other so closely that it is often difficult to distinguish them: moreover, tubercular matter, when dessicated, resembles the calcareous substance above mentioned. In both cases we find remnants of organic tissues, indicating previous incomplete destruction of the pulmonary parenchyma, which occurred simultaneously with the suppuration, softening or transformation of the neighboring parts.

The puckering of the surface of the lung over these collections of matter, though not always found over tubercular caverns, may still serve to establish the identity of the morbid lesion in both cases. For what does it indicate but a retreat

of the pulmonary tissue at this point? What does this shrinking determine? probably a diminished volume of the cyst, either from the absorption or condensation of the more fluid parts of the contained matter; and we have observed a similar puckering over tuberculous caverns which are diminishing. Laennec has noticed some cases of cicatrized ulcers in the lung.

From these considerations we are led to conclude that one of these alterations is a termination of the other, and that obliteration is also a curative effort of ulcers or tuberculous caverns. The cure, in this case, (and I here speak only of a purely local disorder,) would not be effected by cicatrization; but, *first;* because the softened tubercular matter that was retained, would not leave a fistulous cavity; *secondly;* because, when encysted and becoming a foreign body, this matter would be inert, and subject to absorption and to chemical decomposition.

If this be true, we understand why this lesion is more frequent in old subjects than young ones, the latter being generally cut off before any recuperative action could effect those organic alterations that require a long period for their development.

The smaller bronchiæ, like the little vessels near caverns or abscesses of the lung, are always obliterated by the action which induces softening or suppuration. The coat, or pseudo-membrane which lines them, passes over their orifice. I have sometimes observed a cylinder of plastic matter, passing like a plug a short distance within them. This is always observed in oblitered blood-vessels, even of large size; but is rarely seen in the greater air tubes which are here interrupted, on the contrary, they are ulcerated laterally; sometimes their walls are lined with an inorganic, soft whitish layer. I

have not observed cases enough of abscess to know whether the bronchiæ undergo the same changes, but we have already alluded to one in which the false membrane that lined the interior of the cavity, continued into the principal bronchia and induced its obliteration.

In phthisis, I have only observed two cases where the false membrane of the cavern was also continued five or six lines into the cavity of a large bronchia, though without obliterating it; further and more minute observation may prove this condition to be of more frequent occurrence.

I shall not now attempt to point out the period at which any obliteration has occurred, that may be observed near tubercular caverns: in abscess, I consider it probable that it results from the inflammatory action. Perhaps in some cases of tubercular softening, attended by evident inflammatory action, changes are produced in the same manner. At what stage soever the lesion may occur, we know that its effects ought to be the same, whether we refer the difficulty to the introduction of air, or the ulterior changes that may thence ensue in the substances contained in the morbid cavities.

Physiological Effects.

To complete this subject, we must briefly advert to the consequences which these obliterations may produce in the lung itself. We have said that the neighboring bronchiæ were sometimes dilated, and that the surrounding pulmonary parenchyma was emphysematous. The organization of the lung is such that the various constituent parts cannot be supplied from one another: in the vascular system, on the contrary, an obstruction at any one point, can only produce a momentary suspension of the circulation; numerous anasto-

motic passages re-establish it, and carry the blood by other channels to the parts where it was impeded, and even to the lower portion of the obliterated vessel itself. Indeed the circulation seems temporarily increased, nor is it for some time restored to its natural condition. On the contrary, the entire absence of anastomoses in the bronchiæ, renders this transfer of air by collateral channels impracticable in all the parts to which the obliterated bronchia had been distributed; hence ensues a diminution in the extent of the respiratory surface, equivalent to the whole portion of the organ from which the air is excluded. Moreover, the inspiratory effort, or the force which introduces a given quantity of air into the whole lung, being undiminished, it produces the dilatation of the neighboring parts. Whence ensues a new source of diminished respiratory surface which keeps pace with the dilatation of the bronchia, and rarefaction of the pulmonary tissue.

If this obliteration were to exist at the same time in many bronchiæ, it would probably give rise to appreciable physiological effects; the respiratory murmur would no doubt be considerably modified in the parts near the alteration; though we are here little aided by auscultation. Among the symptoms observed in the patients, it would be difficult to discover which really belong to this lesion.

Having finished the first part of our work, we have now to speak of two other species of bronchial obliterations.

Obliteration of the bronchiæ, in consequence of a substance formed and accumulated within them.

Under this head we shall refer to the small bronchiæ and their terminations, having never observed large tubes occluded in this manner, though the small bronchial tubes are fre-

quently filled and distended with matter of various character.

Sometimes the obliteration was confined to a small extent of the bronchia, and produced by a roundish mass; sometimes it continued along the tube filling all its divisions, even the terminal vesicles. It was either confined to a single branch or extended to all the branches of a lobe; whence resulted masses of altered pulmonary tissue: here the precise seat and nature of the lesion could not be determined by the external aspect of the lung, nor by a few cuts into its substance; it was necessary to dissect each separate branch, to discover that the general alteration resulted from the united obliteration of these several bronchiæ.

This obliterating matter resembled both tubercle and pseudo-membranes. In the first case, the consequent lesion offered characters of phthisis, producing granulations when isolated, and infiltration when diffused: in the second case there was a peculiar pneumonia or hepatization, which I shall here describe.

A man died at La Pitié in the last stages of an acute pneumonia, which had run its course very rapidly. At the autopsy, the left lung was found almost entirely hepatized, a portion of the summit only being sound. Cuts made in several directions presented a grained surface, which was red, interspersed with paler spots—at some points yellowish and black. In some places the color was more uniformly grey or like pus. The organ was covered with a recent, yellowish false membrane, that was not disturbed by opening the thorax. The density and specific gravity were the same as the liver: it was readily broken by pressure, and contained no air.

This was evidently a case of pneumonia in the second degree passing into the third or suppuration: as yet nothing

was discovered to distinguish it from red or grey hepatization. But a more careful examination revealed cylinders of a tough substance jutting from the cut ends of the bronchiæ of the third and fourth order, and resembling the plugs of coagula found in blood-vessels. By making longitudinal incisions the bronchiæ were found to be filled with this substance forming a solid cylinder that followed the divisions even to the vesicles, and could be lifted out, so as to present the branched arrangement of a tree. These cylinders were generally very regular, except where they were garnished with small rounded lateral enlargements, (*renflemens*,) either isolated or clustered in festoons. Some of the cylinders presented these only on one side; to demonstrate them, it was only necessary to exert a slight traction upon the principal cord. Near the pleura these enlargements were more numerous, giving the divisions of the cords a knotted appearance, and immediately beneath this membrane their volume, form and color, precisely resembled the grains that appeared on a first glance at the lung, giving it, in the highest degree, the granulated aspect, which characterizes one of the forms of hepatization. The same thing was observed on the surface of the incisions: all the bronchiæ we examined were affected—and they were filled inversely to their size; for where the plastic matter first appeared, it occupied less than a third of the bronchial calibre, whereas, when it approached their terminations it completely filled the cavity.

In external characters this substance resembled fibrine; it was a pale yellowish white, resisting, elastic and divisible into filaments. Under the microscope one of them seemed made up of globules like those of the blood. In the lateral and terminal swellings (*renflemens*) the colour was greyish, or stained with black. There were also some differences in those parts

of the lung which were in the second or third stages of pneumonia: in the latter, the filaments were tarnished, moist, thinned and less resisting.

Nothing remarkable was observed in the texture of the bronchial walls, where these tubes were large enough to be examined, except that some of them seemed to tear more readily than in health. Towards their termination, many partook of the color of the contained matter, and some black lines were observed opposite to the swellings. The vessels were completely empty, and where they could be opened, white, without any evidence of inflammation. Finally, between the different terminal branches, there were red cellular spaces, that projected less than the greyish grains. In those parts hepatized to the third degree, the color of the grains and tissue was similar, but the former were less prominent and the latter was less granulated.

I have observed these alterations four times in subjects that had died of acute pneumonitis, and whose lungs presented only the characters of ordinary hepatization, upon the usual mode of examination. Further researches alone, can determine whether the silence of authors, and the paucity of our own observations, are attributable to the rarity of the lesion, or to an imperfect examination of the lungs. Obliteration of the bronchiæ by plastic matter, here constituted the main point of the alteration, and undoubtedly caused its severity. The last case ought also to be cited as proof of the true arrangement of the bronchiæ, since a cast was furnished of the ramifications.

A protracted and carefully digested consideration of the products that result from various morbid alterations, and of the changes which they may induce, has led us to believe that plastic lymph, the pseudo-membranes, the solid parts of

the blood and fibrine itself, retained by any cause in the vessels, may, under peculiar conditions of the general economy, be transformed into various morbid products, without the necessity of any complicated organic apparatus being formed of the various parts. But, let us here ask, what would have become of the plastic matter in the bronchiæ of the cases just cited, had the patients been under the influence of a tubercular, schirrhous or other predisposition. Would not this case of pneumonitis, in a phthisical person, have produced some remarkable transformations in a lung, making it appear changed into a compact tuberculous mass? We know that such a condition is not uncommon in children, and we have often found it in the monkey of our menageries, an animal which is perhaps more subject than any other, in our climate, to pulmonary phthisis.

The following case of this kind is related to exhibit an alteration characterized by obliteration of the bronchiæ. The patient died under the care of M. Louis; he had presented symptoms of pulmonary phthisis. The left lung adhered throughout to the costal pleura, and intimate adhesions connected it with the pericardium. The pleura pulmonalis, over the whole extent of the superior lobe, formed a greyish white layer a line to a line and a half thick. A longitudinal section of this lobe showed a cavity in the upper half, the lower portion was transformed into a compact mass of a yellowish white color, firm, smooth on the incised surface, grained where torn, and yielding under the nail like crude, firm tubercular matter: the vesicular structure was destroyed, and, except the empty orifices of some large tubes, presenting no appreciable traces of blood-vessels or permeable bronchiæ. From the inner surface of the pleura, ran partitions of a greyish white color, as firm as the fibrous tissue, and which divided the mass into a number of separate compartments.

A minute dissection enabled us to make the following discoveries in the different anatomical elements of the organ the bronchiæ were free for a certain extent; their calibre appeared rather smaller than natural; the branches of the size of a large crow-quill, were partly filled with a yellowish white substance, which might be drawn out of the tubes by a slight force: this matter pervaded the smaller divisions of the bronchiæ, filling them more completely and even adhering in the small twigs, where it was confounded with them, so that it could only be demonstrated by pressing a portion of the lung between the fingers so as to make the matter spring out from the tubes. In the larger tubes this substance had little consistence, was soft, and of a paler color than the parenchyma; as we approached the bronchial extremities it became firmer, and its color more nearly resembled the neighboring parts. The walls of the larger air-tubes were not reddened, further on, they were transformed into tuberculous matter, and finally lost all of their natural characters except their canaliculate form. The same thing was observed in regard to the large bloodvessels, springing from the base of the lung, the isolated branches ran to separate points of the cavern, and were lost in the altered tissue at its surface: and many secondary branches were obliterated, and floated freely in the cavity. All the branches, when cut across were empty near their roots, further on, they contained coagula, their walls were covered with a layer of firm reddish tissue, that sensibly increased their thickness.

We know of no better title to designate this alteration than tuberculous croup of the lesser bronchiæ and vesicles. As in the preceding case, we found the bronchial tubes obliterated by being filled with solid matter, and their terminal divisions so changed as to resemble the matter they contained. We

should also observe, that where it commenced in the bronchiæ of considerable size, this matter had not the tubercular appearance, and resembled the plastic matter of ordinary false-membranes.

I could report many cases where this kind of obliteration of the bronchiæ, from tubercular matter at circumscribed points of the organ, gives rise to granulations, and to one of the forms of anatomical lesion of phthisis. But, my observations on this subject having been made in consequence of communications from my friend, Dr. Carswell, I shall allow him to use the facts, with his own views of the primary seat of tuburcle in the lung.* Feeling confident that the subject will be treated with superior ability, I shall pass on to the third species of obliteration, that caused by compression.

Obliteration of the Bronchiæ by Compression.

Many causes conspire to obstruct the air by compressing the passages, but I shall here confine myself to cases of complete obliteration. All tumours must produce this effect in the neighboring tubes: we have seen it effected by little calculous masses as large as peas, and here the occlusion continued to the end of the tubes.

We have not had time to assure ourselves that a number of the small bronchial tubes are not also obliterated in the disease described by Bayle as granular phthisis. This lesion would greatly diminish the field of respiration, when coincident with tubercles, the softening of which would obstruct the passage of air to other portions of the respiratory surface. I have not found obliteration from this cause in the large

* See Pathological Anatomy. Illustration of the elementary forms of disease; by R. Carswell, London, 1833; Nos. 1 to 6.

bronchial tubes and their primary branches, but have seen a tuburcular tumour developed around the first bronchia, whence arose all the branches of one lung. The subject was a monkey of the genus Macao, which had died of phthisis, after having been long kept in a menagerie. Some of the organs were highly tuberculous: such as the lungs, liver, spleen, mesentery and bronchial glands, and a mass was found in the pericardium. The left side of the thorax was decidedly shrunken, as it would have been after the absorption of a pleuretic effusion. The corresponding lung occupied much less space than usual, was quite void of air and looked as though it had been crowded against the vertebræ by an effusion: there was not, however, a trace of liquid, and the pleura was perfectly healthy and free from adhesions. Inflation of the lungs through the trachea dilated the right only. There was evidently a considerable obstruction at some portion of the left bronchus, which indeed could be penetrated but a short distance.

A rounded mass of tuberculous glands embraced this tube, which it had flattened and completely obstructed. When cut transversely, there appeared only a linear furrow, through which a slender scalpel handle might be introduced; beyond this the bronchus had its natural cavity, but, instead of being lubricated with the usual thin, frothy secretion, there was a reddish glairy mucous, without air-bubbles and resembling that often found in the neck of the uterus or in its cavity after death. This lung must have been quite impermeable to air during life. It may be asked why this obstacle, which prevented the entrance of air, did not also hinder its escape, and why that which was contained at the moment of complete obliteration, should not have remained incarcerated? We suppose that the air was insensibly absorbed, as is proba-

bly the case, to some extent, in health, and as is frequently observed in emphysema of the cellular tissue in all parts of the body. Another important fact observed in this case, is the shrinking of the thorax, in consequence of the obliteration of the bronchia which was destined to supply this lung with air. The ribs, though unattached by adhesions, were forced to follow the retreating lung, by the atmospheric pressure from without. I know of but one parallel case of shrinking in the human subject; perhaps a similar obliteration has never been seen. The fact just related, though belonging to comparative pathological anatomy should attract the attention of practitioners to this subject.

I shall now consider my task completed. The importance of the subject has perhaps been exceeded by the length of the memoir; but, I hope this will be obviated by the novelty and interest of the facts recorded.

ART. II.—*Utility of Tonico-astringent Injections into a Suppurating Abscess. A Case. By* NORVIN GREEN, M. D. *of Bedford, Ky.*

Mrs. W——, a stout, healthy female, aged 22, with a temperament partaking somewhat more of the lymphatic than the nervous, was delivered of her first born February 11th. On the 14th the left mamma presented symptoms of inflammatory action. Pain, hardness and swelling, were experienced, confined exclusively to the one side. Vinegar evaporations, light-bread and flax-seed poultices, and other well known and fashionable remedies were speedily resorted to; but without even a palliating effect. Drawing the breast

and general reduction, however, were unfortunately neglected. The action proceeded rapidly to suppuration, and pointed on the 19th, externally and near to the nipple. From this time for more than three months, various applications in the form of poultices, salves, strong oozes, etc., had been successively employed, which, only serving to promote the rapidly wasting suppuration, it was deemed commendable to have medical aid.

On the 24th of May I was summoned to Mrs. W. Though quite alarmed at the stubbornness of her disorder, yet my patient was entirely ignorant of the amount of disorganization already effected by this draining malady: for almost the entire gland had been broken down and borne off by the ravages of unsparing suppuration. In three directions sinuses were formed: left and downwardly, right and downwardly, and almost directly upward. In the first mentioned opening, the probe passed with great facility to the distance of four inches; and in the last two, to nearly the same extent. The constitution, too, had participated largely in the suffering. The patient had greatly diminished in flesh and strength; stomach and bowels much disordered; a considerable degree of nocturnal restlessness, with strong threatening of, if not actually already, incipient hectic.

Such constitutional remedies, as were thought indicated by the general symptoms, were administered, and as nourishing a regimen adopted as the chylopoietic derangement would allow. A seton of linen tape was introduced through the left lateral sinus, existing at the base of the gland; and another, in like manner, through that of the right. Finding it next to impossible to prevail on my patient to submit to the pain of further operation, I consented to leave the diseased action of the superior portion unaddressed by local remedial agent,

until some benefit should be realized from those already applied.

Due attention was given to the progress of the case; the setons were every day required to be moved. Fearing the tapes were insufficiently exciting, after a short trial they were rubbed, before moving, in pulvis plumbi acetas; and, finally, various mineral astringents were successively employed, (some by injection) to aid in exciting granulations. This course was perseveringly pursued for near six weeks, (the period allotted for a cure by Dr. Physic,) without sufficient benefit to encourage the hope of a reproduction of the parts, or the restoration of the organ to its natural function.

I now thought of laying open the abscess in the several directions of its ravages, and healing from the bottom as an ulcer; but the reluctance of my patient suspended the operation, until, in a correspondence with Prof. Miller, I enquired what more efficient applications would be worthy of a trial. Among other means, he recommonded the use, by injection into the sinuses, of the *tinctura g. aloe et myrrhæ*. Entertaining the highest opinion of the practical skill, as well as scientific attainments of Dr. Miller, I was readily persuaded to give a fair trial to any remedy he might suggest. The tincture was accordingly prepared, after the formula of the Ed. Pharmacopœia, the saffron excepted. Its use was commenced on the 1st July, diluted, at first, to one part of the tincture to two parts of water, and the abscess directed to be filled twice in twenty-four hours; the injection to be retained as much as could be with a tent of lint, till the period of the succeeding dressing. The injection was ordered to be gradually increased in strength; but the thoughtful care of the patient did not allow its use at more than half strength, finding

that, in an undiluted form, it produced painful and prejudicial irritation.

On the 10th July, I found the cure promisingly commenced, the sinuses beginning to fill up, and that one in farthest advance in which no seton had been introduced. The tapes were now removed, and all treatment suspended, save the injection, which the lady had learned to regulate to the best advantage. I saw the patient no more, but to furnish additional supplies of the remedy, which were as often sent by a messenger without further direction.

The recuperative powers now proceeded even more rapidly than had done the disorganising; it required successively a less amount of the tincture, than at the preceding dressing, to fill the cavity, till, by the 10th of August, the cure was complete. I have examined the breast, and find that the reparation is entire, and to all appearances, has every promise of the same usefulness as the other.

Remarks.—Great access to the cause of humanity was claimed, in the treatment of mammary abscess with the seton, as instituted by the "father of American surgery," in lieu of the "bold incision;" but, while I would not depreciate a popular remedy (supported, as this has ever been, by the highest authority,) on account of a single failure, yet it will be readily admitted, that should general experience corroberate the observations of this case, we have a class of remedies which need be attended with comparatively little inconvenience or suffering, and are far more efficient than even the boasted reformation. In this case, the superior efficacy of the vegetable tonic, *locally applied*, over mechanical irritation, or mineral astringents, for the purpose of changing an indolent and wasting into a granulating and repairing surface, is clearly exhibited;

and it remains to be seen, whether the same will not obtain in ulcers and other lesions of this low and obstinately indolent character.

Bedford, Ky. 1840.

Art III.—*History of a Case of Autumnal Fever; accompanied by the vomiting of a fluid of a deep blue color.* By George K. Holloway, M. D., of Panola, Mississippi.

On the 19th of September, 1840, J. W. Mitchell, aged 22 years, of a bilious temperament and sedentary habits, began to complain of lassitude, and pain in his head and back, with confined bowels. These symptoms increased through the night, and on the 20th he was much worse than the day before. The following night was one of great suffering and restlessness; the pain having extended from the spine into his limbs and epigastrium, the latter of which, moreover, was the seat of oppression and fullness. The next morning, 21st., his visage was haggard, and, spontaneous vomiting coming on, he threw up a quantity of *thick, deep blue fluid.* The lady of the house at which the patient lodged, being struck with its appearance, washed a rag upon which he had vomited, in clear water, and found that it imparted an indigo color to the fluid. The master of the house now administered a dose of colomel which opened his bowels, but did not mitigate his symptoms. Indeed, they increased in violence, and a sense of choaking with frequent sighs came on, the material vomited up, still exhibiting the same color. On the 22d his condition was still worse, as he had intense thirst and great rest-

lessness, and more frequent blue vomitings. Another and larger dose of calomel was now administered, which produced copious, thin, bilious stools, with considerable discharges of flatus, but the succeeding night was one of great sleeplessness and great anxiety.

In the forenoon of the next day, 23d, we saw him for the first time. He was in a state of the utmost alarm; his visage almost Hippocratic; eyes red and wild; forehead, neck and breast, cool and wet with sweat; tongue tremulous, pointed towards the tip, dry and red on its edges, its papillæ of a darker hue and raised, and it was with difficulty that he could project it over his teeth; the mucous lining of his mouth and fauces were as red as in scarlatina; his pulse was 120 or more in a minute, but full, soft and compressible; his restlessness was extreme; the pain in his loins intense; the discharge of urine small and with difficulty; the discharges from the bowels watery, bilious and frequent; the epigastric distress intense; and the vomiting of a deep blue matter constant. This fluid stained a linen rag as blue as if it had been dipped into a saturated solution of Indigo. Its quantity was very great, and the stomach so excited, that the slightest mechanical irritation of the fauces would bring it up. Not having before met with such a case, we supposed the patient might have taken something which had colored the contents of his stomach; but on careful inquiry found that he had not.

The case appeared hopeless, but we felt it a duty to prescribe, and directed as follows: A blister from the ensiform cartilage to the symphisis pubis, and another on each ankle, with one of the following powders every four hours—

℞. Submur. Hydrarg. grs. xv.
Pulv. Ipecac et Opii aa grs. viij.

Mix and divide into four powders.

To the first of these powders we added a quarter of a grain of the sulphate of morphine. The powders did not increase his nausea, which, at no time, was proportionate to the vomiting; and they moderated the purging. Towards day of the twenty-fourth, he had a tolerably consistent alvine evacuation, which, however, displayed a bluish tint, and was extremely fœtid. We now omitted the ipecac and opium, and gave him three grains of calomel with a fourth of a grain of the sulphate of morphine every four hours. During the day he had two consistent alvine discharges.

On the 25th we found that he had passed the night without any further alvine evacuation, but the vomiting had continued. His pulse was less frequent, and rather fuller. Same medicines continued.

26th. Had one evacuation last night, after which he was inclined to sleep. This morning he seemed to us better; but complained of some abdominal fulness. We prescribed five grains of calomel, and half a grain of morphine, every six hours. In the course of the day, he had one full and consistent stool, of a bluish green color. In the evening we left him on the use of this compound, with orders that he should take a teaspoon full of denarcotised laudanum, if excessive and watery purging should come on.

27th. On arriving we learned that in the early part of the night he had a most profuse evacuation, followed by great relief, and another also large, and likewise productive of relief. Immediately after the last, his attendants unfortunately gave him the laudanum. He had no more, and did not sleep. Our arrival was at 10 o'clock, when we found him in all respects much worse. A hiccup had supervened, with subsultus tendinum and tinnitus aurium; the surface of his body was covered with a cold sweat; his respiration was hurried

and laborious, with constant sighing, and ceaseless jactitation; he vomited much, but the fluid now thrown up was of a bistre brown instead of a blue color; his pulse had also suffered a signal change, being very small and frequent, and his alarm and terror were of the most remarkable kind. In this extremity we made extensive application of blisters; gave him twelve grains of calomel every three hours, resorted to injections and suppositories to bring on immediate alvine evacuation, and administered stimulants and tonics; but the last increased the irritability of his stomach and had to be omitted. About 8 P. M. he had a copious, tolerably thick, but fœtid alvine discharge, which was followed by great relief from most of his symptoms, and a slight strangury came on.

Some of his friends now expressed to him the opinion that his disease would terminate fatally, whereupon his terror, which had much abated, was reproduced, and all his bodily symptoms became worse. His pulse sunk, as did the heat of his extremities; his face assumed a cadaverous aspect; the vomiting of the bistre-brown fluid, as thick as the white of egg, returned, and dissolution seemed to be at hand.

A consulting physician was now sent for, but did not arrive till the morning of the 28th. Before sunrise of this morning, our patient threw up about two quarts of fluid of the same color as that discharged the day before, and he continued to gulp up the same kind of fluid till within fifteen minutes of his dissolution, which, however, soon occurred. A *post mortem* examination was not made.

We regard this as a case of malignant Congestive Fever, the striking peculiarity of which was the blue and brown discharge from the stomach.

For our views on Congestive Fever, we beg leave to refer

to the *South. Med. and Surgical Journal*, for the month of May or June, 1839, published at Augusta, Georgia. Those views, however, were formed from observations made in the arid climate of that state, and are not in all respects applicable to the fever as it occurs in the more humid atmosphere of the state of Mississippi. Here the symptoms are more insidious and equivocal than in Georgia. Often to superficial observation, nothing more than a simple intermittent of the tertian or quotidian type, or a mild remittent, seems to be indicated; but a close observer will detect its malignant character, in the early cold and clammy sweats of the upper part of the body; the tremulous motion of the tongue; its conical point; the difficulty of projecting it; the dry and rough, or smooth and slimy surface which it presents, and the fiery redness of its edges—appearances which do not occur in simple intermittents and remittents, except under excessive purging. Great flatulence is also present in the malignant cases, and the intermission is, in general, imperfect.

The only modification of the treatment we had pursued in Georgia, which we have found necessary in Mississippi, is the administration of larger doses of cathartic medicines in the beginning, as more is required to purge the patient; but afterwards we have found smaller portions, than are required in Georgia, sufficient to keep up the purging; which is more likely to degenerate into a watery diarrhœa in the former than in the latter region. In both states, our reliance is on calomel, ipecac, and opium, or the sulphate of morphine. Saline and drastic purgatives are injurious, and the lancet generally inadmissible.

October, 1840.

ART. IV.—*A Case of Hepatic Abscess, in which Biliary Calculi were discharged at the side, after an operation, resulting favorably.* By WILLIAM DAWSON DORRIS, M. D., of Nashville, Tennessee.

The following case was discharged from my care a few months since, and the fortunate issue of it under the most unpromising circumstances, together with the unusual number of calculi discharged after an operation, I believe, not often resorted to, induce me to hope that it will not be found uninteresting to the readers of the Journal. The subject of it was a lady, Mrs. E. Y., æt. about 31 years, corpulent, and of the phlegmatic temperament. In February, 1838, I was first requested to visit her, and found her laboring under prolapsus uteri, attended with diarrhœa. Her menstrual function was also deranged, and at each monthly period the right ovary was so enlarged as to be distinctly felt on examination. In April she labored under the symptoms of internal polypus of the uterus, with uterine hemorrhage at the menstrual periods. About this time she had a copious discharge of a dark colored fluid, per vaginam, which gave her great relief, and the enlarged ovary ceased to be perceptible; her catamenia also returned and her health appeared to be much improved. About this time, however, she began to complain of pain in the region of the liver, for which I prescribed mercurial cathartics, Dover's powder, and warm fomentations. Her bowels were torpid, and required habitually to be moved by cathartics. In September she was attacked with bilious remittent fever, from which she was recovered by the usual treatment in two weeks.

November 1st. the patient was relieved of a polypus as large as a duck egg, and with it of the hectic flushings, the

uterine hemorrhage, and all the other unpleasant symptoms which denoted its presence. But symptoms of ovarian disease still existed, and in March I found her suffering again with prolapsus uteri, and torpor of the liver and bowels. The uterus was restored to its place, a saline draught administered to move her bowels, and morphine given for the severe pain.

Under the treatment which was modified from day to day the sufferings of the patient were mitigated, but on the 13th of April I found the liver and right ovary much enlarged Ordered the skin over those parts to be rubbed with ung. hydrarg.

16th. Gave jalap 15 grains and rhubarb 5 grains.

18th. Found medicine had acted well, my patient sitting up and feeling much better.

22d. Enlargement of her side increasing rapidly, and for the first time during her illness, she is losing flesh. Complains of great burning in the right side, and is slightly salivated by the mercurial inunctions.

25th. Patient has been more comfortable for several days, and the indications of abscess of the liver are such that I proposed an operation; but as many physicians had been consulted on the case and had not agreed as to the nature of the affection, the lady objected.

May 1st. I had the pleasure of meeting Dr. F. Robertson in consultation. The tumor in the region of the liver was now eight inches in width, and twelve inches long. It was easy to perceive the interstice between that organ and the ovary, though their unnatural growth had brought them into contact. Blisters were applied over the tumor, with blue pill, sup. tart. potas. aloes and rhubarb to keep the bowels soluble. Fomentations to be continued.

2d. Blister drew well; purgatives acted freely, and the bile discharged produced great irritation in the rectum. Blue pill with hyosciamus to be continued.

5th. Blue pill discontinued, ptyalism having come on. Patient is discharging a soot-colored fluid through the vagina, and the enlargement of the ovary is visibly on the decline, while that of the liver is increasing.

9th. Patient very restless; has had shiverings, and syncope; pain in the right side, back and head, excruciating.

12th. A discharge from the bowels, of most offensive odor, appeared, and of black, yellow, green and white colors mixed. This matter continued to pass off from her bowels for a few days, and on the 15th she began to vomit a fluid of the same description.

16th. Patient better—hyosciam. pills to be continued, with mild purgatives.

21st. The enlargement of her side amounts to a deformity. She has passed five biliary calculi per anum.

22d. Visited her in company with Dr. Robertson, who advises her to submit to having the tumor punctured.

23d. Operated, by making a transverse incision two inches and a half in length through the integuments, and about two inches through the muscles down to the liver, which was found attached to the parietes of the abdomen. About a quart of such matter as she had discharged by the bowels flowed out, when faintness came on and made it necessary to check the flow for the time. Up to the 31st., the abscess continued to discharge freely at each dressing; the patient is so far improved as to be able to sit up.

June 6th. The incision being kept open, I extracted five biliary calculi of the size and shape of a beech nut, some of which when recently removed weighed twelve grains.

8th. Three biliary calculi removed at this dressing. Patient recovering.

11th. I extracted at this visit eighteen calculi, fourteen of which had a common, very thin, membranous envelope.

August 1st. Patient improves, using pil. hydrarg. and hyosciam. pro re nata. Up to this date one hundred and one gall stones have been extracted through the incision.

27th. Patient is able to attend to her household affairs. From this period until the 18th of December, ten more calculi were extracted, when the orifice began to close.. Thus, in all, one hundred and eleven calculi were taken away by instruments, and five were discharged per vias naturales. The health of the lady continued steadily to improve after the opening of the abscess, and it is better in every particular than she has enjoyed for many years.

I have not pretended, in the history of this case, to give all the minutiæ of treatment pursued during its progress, as there was nothing peculiar in it, and as the result did not appear to be brought about by the medicinal agents employed. It is a case beautifully illustrating the *vis midicatrix naturæ*—that conservative power by which offending matters in a deep seated and vital organ are directed to the surface of the body and there discharged.

March 17, 1841.

ART. V—*Case of Pretended Mayhem, which was tried before the Mayor's Court in Cincinnati, March*, 1840. By S. D. GROSS, M. D.

The following case is interesting not only in a physiological point of view, but also as a "little piece" of medical jurisprudence, and deserves to be recorded as a warning to those who, under an idea that they are infallible, never make any but the most hasty and imperfect examinations, no matter whether they involve life, property, or reputation.

Two lads, Hiram and Jackson Black, the one fourteen, the other eleven years of age, after having resided about two years at the Shaker village, in Crosby Township, within twenty-two miles of Cincinnati, returned to their home in Bracken county, Kentucky, where a report was

soon after circulated that they had been emasculated by some of their late brethren. Upon inquiry, the mother and uncle of the boys confirmed the story, alleging that both were without testes, in consequence of an operation that had been performed on them the preceding summer. An outrage such as this was well calculated to inflame the public mind, and accordingly several of the most intelligent and influential citizens of the neighborhood, determined to sift the matter to the bottom, addressed a letter to Bellamy Storer, Esq., requesting him forthwith to institute suit against the supposed offenders. The boys, accompanied by their uncle, soon after appeared in Cincinnati, making affidavit to the circumstance above mentioned, and undergoing an examination by an old medical practitioner, who, in addition to the deficiencies already alluded to, testified as to the presence of distinct and well-marked cicatrices on the scrotum of each of them.

In consequence of the evidence of this gentleman, legal proceedings were immediately instituted against the Shakers, four of whom were apprehended, and lodged in the county jail. In the meanwhile, at the request of the counsel for the defendants, Messrs. Riddle & Roll, I visited the village to examine into the condition of the other male children at the establishment, with a view of ascertaining whether they also had been subjected to that kind of treatment. It was soon apparent, however, that no such operation had been performed, as all the boys, twelve in number, from the age of two years up to that of eighteen, had no cause of complaint in that particular.

The next day, after reporting the result of my observations to the court, I was requested also to examine the complainants, Hiram and Jackson Black, in conjunction with the gentleman who had previously investigated their cases, and testified as to the absence of their testes. The scrotum of each was, indeed, empty, but as to scars or cicatrices, none could be seen, though several folds of the skin, or rather the smooth, glossy intervals between them, were pointed out, with no little self-complacency, as evidences of their existence. On a little further search the *lost* testicles were found to be situated in the groin, a little below the external ring, whence with a little traction they could be easily forced down into the scrotum. This announcement of course put at once an end to the trial, to the great delight of the poor Shakers, the dismay of the *medical jurist*, and the great merriment of the by-standers.

It is not a little singular that, in both these cases, the testes should have been so late in descending into the scrotum. The lads were of rather short stature for their age, but in other respects perfectly well-formed. The testes were about the ordinary size and consistence; and although they could be easily pressed, as already stated, into the scrotum, yet they immediately re-ascended to their former position, as soon as the fingers were removed.

REVIEWS.

ART. I.—*Du Varicocele, et en particulier de la Cure Radicale de Cette Affection ; par* H. LANDOUZY, *interne a l'Hotel-Dieu, membre de la Societe Anatomique et de la Societe Medicale D'Observation, &c.*

Essay on Varicocele, particularly on the Radical Cure of this Disease. By H. LANDOUZY. 8vo. pp. 120, with a lithographic plate. Paris: 1838.

A monograph on varicocele is an acknowledged desideratum in our surgical literature. No sufficient work has ever been issued from the British or American press on the subject, and if it be true, as M. Landouzy seems to think it is, that six-tenths of the male sex are afflicted with this singular malady, a careful analysis of the contents of his essay will not, it is believed, be unprofitable.

The term varicocele, compounded out of the Greek and Latin, is employed to desiginate a dilated condition of the veins of the scrotum and spermatic cord, and is regarded by the author of the present essay as synonymous with the word circocele and varicose hernia. By some of the older writers, such as Celsus, Murray, Waitz, and Most, the affection is described under the appellation of circocele, while Callisen, Boyer, Delpech, Sir Astley Cooper, Breschet, Blandin, Velpeau, and other modern surgeons, use the name varicocele to

denote the varicose enlargements of the scrotum, no matter what part of it they may implicate.

Although this disease occurs exclusively in the male, yet there is occasionally in the pudendal lips of the female a varicose disposition which corresponds in its essential features to the varicose enlargement of the scrotum; the veins of the ovaries and of the round ligament of the uterus are also liable to a species of dilatation which may be said to resemble that of the spermatic cord. Still the affection is very different in the two sexes; for while in the female it is caused either by pregnancy or some lesion of the abdomen, and is therefore usually of a transient nature, disappearing with the removal of the cause by which it was induced, in the male it is not only more permanent, but is apt to be attended, if allowed to proceed unrestrained, by very serious consequences, especially to the corresponding testicle.

Varicocele may appear at any period of life, in the young as well as in the old. Professor Delpech, of Montpelier, thought it was almost exclusively confined to adults or aged people; an opinion which is directly opposed to that of M. Landouzy, who, in twenty-seven cases in which this subject was noticed, ascertained that seven occured between the ages of nine and fifteen; seventeen between fifteen and twenty-five; and three between twenty-five and thirty-five. Thus, if this statement can be relied upon, and we can see no reason to doubt it, it must be concluded that the malady in question is most common, by far, in young subjects within the first ten years from the time of puberty, or during the period of the greatest excitement of the genital system.

The development of this disease appears to be greatly influenced by the anatomical disposition of the parts, as the dependent situation of the spermatic veins, their length, the

feebleness of their parietes, relatively to the course which they are obliged to traverse, the absence of valves, and especially the frequent alternations of repletion and vacuity to which they are exposed in the various attitudes and movements of the body. Another cause which likewise powerfully contributes to the production of varices, is the enormous quantity of veins which, under the name of the pampiniform plexus, give rise to the veins of the testicle. In the normal state, andparticularly when the scrotum is contracted, this venous packet does not appear to be very large; but as soon as they are in the slightest degree enlarged, or even when the parts are merely relaxed by heat, a good idea of it is afforded by the immense number of venous branches which surmount and encircle the testicle and epididymis. Besides these circumstances, our author supposes, and very justly as we think, that the pressure of the column of blood in these vessels must, according to a well known law of hydrostatics, exert no little influence in the formation of varicocele. J. L. Petit was inclined to ascribe considerable importance to the weight of the testicle, which has a tendency, he imagines, to obliterate the vessels at the external ring, and thus render the return of their contents more difficult.

Pathologists have long been familiar with the fact that varicocele is much more frequent on the left side than on the right, and many ingenious notions have been offered in explanation of it. Morgagni originally suggested the idea, which has since been adopted by many others, that it was owing to the more dependent situation of the left testicle, and the greater length of the left spermatic vein, which, instead of pouring its contents into the inferior cava, like the right, terminates in the left renal, nearly at a right angle with the current of the blood from the kidney. Others have attributed

the greater frequency to the compression made upon the spermatic vessels of the left side, by the fœcal matters accumulated in the iliac portion of the colon. Such, among others, is the opinion of Callisen and of J. L. Petit. According to M. Landouzy, however, this influence is greatly overrated, as out of seventeen patients whom he carefully examined in reference to this subject only a single one was found to be habitually affected with constipation of the bowels. He also thinks that the opinion of Dr. Lenoir, of Paris, who attempts to explain the circumstance in question by the narrowing of the left inguinal ring, from the frequent contraction of the abdominal muscles, although plausible, is without foundation; a view in which we entirely concur with him. Be the cause, however, what it may, the fact is undeniable that the disease is generally found on the left side, as we have pointed out in another publication. In upwards of one hundred cases examined by Breschet, of Paris, only one occurred on the right side. With this result the experience of nearly every practitioner must coincide.

The exciting causes of this affection the author arranges under two heads, under those, namely, which facilitate the afflux of blood to the genital organs, and those which prevent its return to the heart. These two orders of causes may exist separately, or occur conjointly in the same individual. In the first may be enumerated all venereal excesses, masturbation, violent passions, riding, dancing, severe exercise on foot; in short, whatever has a tendency to invite the blood constantly to the lower parts of the body. Under this head, may also be included violent contusions of the scrotum and inflammation of the testicle, whether essential or symptomatic, which, by keeping up irritation and a considerable afflux of blood, may at length produce dilatation of the ves-

sels, or render them more sensible to the causes of accidental enlargement.

The causes of the second order are much more frequent, since they embrace every thing that opposes an obstacle to the return of the blood to the heart. Thus, tumors developed in the abdomen, whatever may be their seat or nature, may compress, either directly or indirectly, the spermatic vessels, and thus occasion varicocele. In the inaugural dissertation of M. Brixoux, published in 1837, a very interesting case is recorded in which the disease seems to have been produced by this cause. The patient, who had been operated on at la Charitie according to Velpeau's method, died in consequence of some other disease, which, upon dissection, was found to be a very large encephaloid tumor, situated in the left ileo-lumbar region, and compressing the vein of the corresponding testicle.

Inguinal and crural herniæ, whether congenital or accidental, may also oppose the venous circulation of the scrotum and of the cord, either by their direct compression upon the vessels, or by the manner in which they diminish the internal abdominal ring. The same effect may result from swelling of the lumbar ganglions, from scirrhous tumors along the spermatic cord, from hydrocele, and other kindred affections.

Hypochondriasis and melancholy have been enumerated as causes of varicocele; but without, as our author thinks, sufficient reason. The same is true of what Sir Astley Cooper says about the fatty accumulations of the omentum and mesentery, which, by compressing the spermatic vessels, interrupt, he supposes, the return of blood to the abdomen. According to Landouzy, considerable mischief occasionally results from the wearing of ill-constructed trusses, improperly applied suspensory bags, tight waistbands, or even tight pan-

taloons; at all events, there is reason to believe that if the disease is not thus induced, it is frequently kept up, increased, or aggravated. .

We have already alluded to masturbation and venereal excesses as so many causes of the disease under consideration; and there can be no doubt that they are much more frequently concerned in its production than is generally imagined. Indeed, we are fully persuaded, from considerable experience, that this is the case. How these causes act in developing this affection admits of ready explanation. Their tendency is not only to determine an abundant afflux of blood to, and consequent congestion in, the genital organs, but to produce more or less fatigue in the muscles of those parts, especially in the cremaster and dartos, together with a loss of nervous innervation, which diminish their power and contractile energy. The testicle being thus insufficiently sustained sinks down, by its own weight, into the scrotum, which, with the spermatic vessels, is thereby kept in a state of constant relaxation. Heat acts in a similar manner, and produces similar results. Hence varicocele is much more frequent in hot than in temperate climates.

Finally, varicocele appears to be occasionally hereditary. Professor Blandin, of Paris, in an able article on this disease, in the "Dict. de Medicine et Chirurgie Pratiques," refers to three brothers with whom he was personally acquainted, who were all exempted from military duty on account of the existence of this malady: the father was similarly affected. An analogous case is mentioned in an inaugural dissertation published at Paris in 1837.

The next topic commented upon is the co-existence of varicocele with other affections, especially varices of the inferior extremities. In fifteen cases, in which careful inquiry

was made in reference to this point, the occurrence was noticed only once. On the other hand, in twenty-one persons affected with varicose enlargement of the legs, the spermatic veins were found to be perfectly free from disease. These data, although insufficient, would lead us to conclude that there is rarely any connection, and then not necessarily so, between the two maladies in question. The same is true of hemorrhoids.

We now come to speak of the symptoms and progress of varicocele. In the early stage, the affection is generally announced by a sense of weight in the testicle, extending to the groin or even the lumbar region; unusual pain and dragging in the course of the spermatic cord, and elongation of the scrotum, which is soft, pendulous, and apt to increase very much in bulk from heat or long walks. Another circumstance which is remarked at this period, is the frequent handling of the parts by the patient, to place them in a more favorable position, and to support them the better by means of his clothes. As the disease progresses, exercise becomes painful, the patient is easily fatigued, the features are visibly altered, the surface is bathed with perspiration on the slightest exertion, and the affected organ has to be constantly supported by a suspensory bag. The pain, which is commonly of a dull, aching character, often extends to the back and kidney; in some instances colic is experienced; in others, there is a sense of weight in the anus; and in one patient, observed by M. Landouzy, the penis was affected with smarting sensations, attended with scalding in discharging his urine. Another symptom, which the author says is never wanting, and which writers have hitherto neglected to mention, is a remarkable increase of the cutaneous secretion of the scrotum of the affected side.

When fully developed, the disease presents itself under the form of a soft, fluctuating, knotty tumor, extending from the upper border of the testicle to the inguinal ring. The enlargement has neither the regular outline and elastic feel of hydrocele, nor the firmness and globular aspect of sarcocele, nor the compact consistence of inguinal hernia. In case it is very voluminous, it usually occupies the whole of the left side of the scrotum, from the base of the external ring. The subcutaneous veins, under these circumstances, are unusually distinct, forming a very prominent superficial net-work. Indeed, it not unfrequently happens that the vessels which are ramified over the surface of the scrotum equal in volume the femoral vein of the adult, as in one of the cases mentioned by our author.

As to the spermatic veins themselves, they frequently acquire nearly as large a volume, forming a mass which may be justly compared to a bundle of irregularly rolled up cords, to a cluster of earth-worms, or to the intestines of a chicken. On percussing the tumor attentively, we perceive very distinctly that it contains more vessels than in the normal state, and that it is difficult to distinguish the vas deferens in the midst of the inextricable net-work. Some of the vessels present the feel of membranous tubes, with soft fluctuating parietes, while others are quite hard, owing to their being partly obliterated or filled with coagulated fibrin.

Although the symptoms of this disease are usually well marked, yet it is sometimes liable to be confounded with other lesions. The affection for which it is most apt to be mistaken is inguinal hernia, especially that variety of it in which the omentum is concerned. The best way in such cases is to place the patient on his back, and hold up the scrotum until the vessels are entirely emptied of their con-

tents; the finger is then applied against the external ring, and the patient requested to rise, when, if the disease be varicocele, the spermatic veins will immediately refill, whilst, if it be hernia, the bowel will be unable to descend.

The progress of this disease is usually slow, years elapsing before it occasions much suffering or inconvenience. In some instances, however, it increases with great rapidity, and gives rise to severe local disturbance, with more or less constitutional derangement. One of the most serious and unpleasant effects from this disease is atrophy of the testicle and epididymis, produced evidently by the pressure of the enlarged veins by which these organs are surrounded, as well as by those which enter into their composition, and which, in the more severe forms of the malady, are usually much increased in size. Celsus, it would appear, was already fully aware of this fact, which has been particularly noticed since by Pott, Callisen, and other surgeons. In thirteen of the cases recorded by our author, the left testicle was found to be more or less atrophied in nine. Occasionally, though rarely, this lesion exists simultaneously on both sides. In either case, it is generally attended with a gloomy and melancholy state of the mind, sometimes bordering upon alienation. Of this, the writer of this article has witnessed several instances.

It is seldom that opportunities are afforded for dissecting the parts concerned in varicocele. It is to be regretted, therefore, that the older surgeons, who were in the habit of extirpating the spermatic veins, or even of performing the operation of castration, for the relief of this disease, have left us no positive information respecting the pathological anatomy of it. Sir Astley Cooper, indeed, is almost the only writer who has said any thing on the subject. "On dissection," he observes, "all the veins are found to be dilated, and to have

undergone such a degree of elongation, that the one situated along the course of the vas deferens descends much lower than even the testicle itself, which is thus placed, as it were, in front of it. It follows, moreover, from this elongation, that a considerable portion of the varicocele passes below the level of the organ in question. At the same time that these vessels are distended and rendered varicose, their coats are thickened to enable them to sustain the increased column of blood; or rather, this thickening is produced by the greater quantity of blood which flows in their *vasa vasorum.*" In several cases in which we have carefully examined the condition of these vessels after death, we found them to be greatly convoluted, knotty, harder in some places than in others, and irregularly dilated, many of them being more than ten times the ordinary volume. Their parietes were very thick, dense, and rigid, almost of the nature of fibro-cartilage, at some points, and very much attenuated, soft, or rather brittle, at others. In cases of long standing, some of the veins are completely obliterated by adhesive inflammation, or by the formation of fibrinous concretions, imparting to the finger the sensation of so many solid bodies, pieces of cat-gut, or whip-cord.

Having described the seat of varicocele, together with its causes, its symptoms, and its nature, the author at length arrives at the treatment, which he divides into palliative and radical. Regarded until recently as incurable, or as beyond the reach of any surgical operation, temporary relief was all that was ever looked for by the practitioner. This consisted chiefly in the wearing of an elastic suspensory bag, in the use of cold lotions, either simple or slightly astringent, to the scrotum night and morning, and in the strict avoidance of every thing calculated to favor a determination of blood to

the spermatic vessels. To obtain full advantage from this treatment, the patient should refrain from dancing, horseback exercise, fatiguing walks, warm bathing, venereal indulgences, and protracted standing; which, as we have already seen, are so many causes of the malady under consideration.

In slight cases, this plan of treatment will doubtless answer very well; but when the disease is fully developed, progresses with unusual rapidity, is attended with much suffering, or threatens the destruction of the testicle, a radical cure is demanded. For this purpose various operations have been devised. With some of the ancients the actual cautery was a favorite remedy, especially when the affected veins were seated superficially; if, on the other hand, they were far removed from the surface, they first tied and afterwards extirpated them; an operation still resorted to by some of our modern surgeons. Gooch and other writers have reported cases of varicocele in which the suffering was so constant and intolerable, that nothing but castration could afford the patient any relief. In this country the spermatic artery has been repeatedly tied for the cure of this disease. The operation, we believe, was first performed in 1821 by Dr. Jameson, of Baltimore, who published an account of it a few years afterwards in the American Medical Recorder. In none of the cases in which he executed it did the patient suffer any inconvenience, either in regard to the integrity of the testis, or as respects the exercise of its functions. It is proper to state, however, that the operation is not only difficult of performance, but that it occasionally fails. Varicocele has also been cured by tying the spermatic veins. Successful cases of this operative procedure have been reported by Professor J. C. Warren, of Boston, and Dr. Stephen Brown, of New York.

Excision of the spermatic veins is another expedient which

is sometimes resorted to for the cure of obstinate varicocele. Professor Warren, who seems to prefer this operation to all others, states that he has repeatedly executed it, that it always affords great relief, and that he has never found it necessary to repeat it. Whether others have been equally successful, we have no means of determining. To perform this operation the patient should be placed on his back, and the external parts carefully shaved. An assistant holding the vas deferens between his thumb and forefinger, the surgeon makes an incision from an inch and a half to two inches in length over the most prominent part of the tumor down to the veins which, bursting through the opening, are now to be seized with the forceps, and divided with the knife or scissors, at the upper and lower angles of the wound. The bleeding frequently ceases spontaneously; but should it be necessary ligatures are to be applied to as many orifices as may require them, when the edges of the wound should be approximated by one or more stitches and closed with adhesive plaster. In one instance, in which this operation was performed by Dr. Warren, a large quantity of blood was extravasated into the cellular substance of the scrotum, followed by inflammation, extensive sloughing, and loss of the testicle.

The best method, however, of effecting the radical cure of varicocele, according to our author, is that proposed by M. Breschet, of Paris. It is founded upon the anatomical arrangement of the part, that is, upon the facility with which the varicose vessels can be isolated from the spermatic artery and vas deferens, and afterwards compressed, so as to obliterate their caliber. This is effected by means of a forceps with flattened plates, which are worked by a screw. The pressure is applied in a gradual manner, but with sufficient force to destroy the life of the scrotum and of the affected ves-

self. The instrument is usually removed in from six to eight days; in the meanwhile the patient is kept on his back, cold lotions are applied to the scrotum, and the case treated upon general principles. When the slough is detached, the edges of the wound are approximated by adhesive straps, and the person is permitted to walk about. "The radical cure of varicocele," observes the author, "is thus obtained with the greatest certainty and without the slightest danger to the patient." In this way, M. Breschet is said to have operated successfully in more than one hundred cases, a number of which were witnessed by M. Landouzy, and are minutely detailed in the present essay. The average period required for a complete cure is twenty-three days.

Whether the method of Breschet, so much vaunted by our author, is really entitled to the praise which has been bestowed upon it, further experience alone can determine. In this country, it has not been sufficiently tried to enable us to form any opinion in regard to its value. The operation, it strikes us, must be exceedingly painful, so much so, as to prevent the majority of persons affected with varicocele from submitting to it, excepting as an ulterior resort. In speaking on this subject, Dr. Warren observes: "I have not been able to prevail with patients to keep on the screw long enough to effect the object wished for. The last to whom it was applied took off the screw a short time after its application, walked out of the hospital, and has not been heard of since."* A similar remark has been made by others.

It will not be necessary, after what has been said respecting the different operations that have been devised for the relief or radical cure of this disease, to describe the different methods of Velpeau, Davas, Fricke, Grossheim, and Rey-

*Surgical Observations on Tumors, p. 439: Boston, 1837.

naud, more especially as they must all be regarded, at least to some extent, as so many modifications of the plan proposed by M. Breschet. We shall, therefore, conclude the present notice by inserting an account of the operation of the late Sir Astley Cooper, which, on the whole, we prefer to any that has yet been suggested, especially when, as often happens, there is great relaxation of the scrotum, on a partial removal of which it is founded. The mode of performing it is as follows: "The patient being placed in a recumbent posture, the relaxed scrotum is drawn between the fingers; the testis is to be raised to the external ring by an assistant; and then the portion of the scrotum is removed by the knife or knife-scissors; but I prefer the former. Any artery of the scrotum which bleeds is to be tied; and a suture is then made to bring the edges of the diminished scrotum together. The patient should be kept for a few hours in the recumbent posture, to prevent any tendency to bleeding; and then a suspensory bag is to be applied, to press the testis upwards, and to glue the scrotum to the surface."*

"It is of no use," adds Sir Astley, "to remove a small portion of the scrotum, for from doing this I have failed. When the wound has healed, the varicocele is lessened, but not always entirely removed; but the pain and distressing sensations cease, if sufficient of the scrotum be removed." The operation is not painful, nor is it followed by any constitutional irritation. The intention of it is, as the reader will at once perceive, to afford a permanent support to the enlarged vessels, rendering it thereby unnecessary for the patient to wear a suspensory bandage.

S. D. G.

*Dunglison's American Medical Library, p. 301: Philadelphia, 1839.

ART. II.—*Manuel de Medicine Operatoire, fonde sur L'Anatomie Normale et L'Anatomie Pathologique. Par* J. F. MALGAIGNE, M. D.

Manual of Operative Surgery, founded on Healthy and Morbid Anatomy. By J. F. MALGAIGNE, M. D.; 18mo., pp. 773. Paris: 1837.

This is one of the numerous manuals which have been issued by the Parisian press, within the last twelve years, on the different departments of medical science; and judging from an attentive examination of its contents, we are disposed to believe that it is quite equal, if not superior, to any of those that have preceded it. M. Malgaigne is well known in France, not only as an able writer, but as an excellent teacher, being attached to the Parisian Faculty of Medicine as *under-professor* of surgical anatomy and operative medicine. The first edition of the present work was published about seven years ago, and although it was by no means small, scarcely two years had elapsed before it was completely exhausted. Soon after its appearance in Paris, it was reprinted in Belgium and translated into the German language; flattering proofs of the estimate placed upon it by the physicians of other countries. In addition to his manual of operative medicine, he is the author of an able dissertation on uterine polypes, of a memoir on a new theory of the human voice, of an essay on the best method of treating lachrymal fistules, of Clinical Souvenirs of the St. Louis Hospital, and finally, of a treatise on surgical anatomy. The latter work, which was published a few years ago, will be noticed more fully in a future number of the journal.

In this edition the author has carefully corrected the errors of the first, and, besides a great many facts and observations

introduced into the text, several new articles are added to the work. Indeed, the manner in which he has executed his task is highly creditable to his talents; and his manual may be safely referred to as presenting an accurate outline of the existing state of the science of which it treats. The subject is not, of course, so elaborately discussed as in the celebrated work of Professor Velpeau, because M. Malgaigne has written more particularly for the use of students and the younger members of the profession, and has therefore confined himself within much narrower limits; he has furnished rather a miniature than a grand picture, in which all the features are fully delineated, or set forth in their just proportions. In the composition of his manual he has availed himself freely of the various and accurate information embodied in the writings of Sabatier, Lisfranc, Mayor, Ducamp, Amussat, Percy, Dupuytren, Senn, Velpeau, and others, besides the most important periodical literature of the day. Every operative procedure, no matter by whom devised, improved or modified, is carefully described, and in every instance, at least so far as we are enabled to judge, referred to its appropriate author. In this respect, ample justice has been done to the surgeons of every nation, and, as might be expected, those of the United States are by no means over-looked or neglected. The name of Dr. Mott, known in every portion of the civilized world, not only figures in the preface, but occurs in connexion with some of the boldest operations that have ever been performed on the human subject; that of Physick is also duly noticed; and so are several others of minor note.

As the work of M. Malgaigne is strictly elementary in its character, it would be impossible to present any thing like an analysis of its contents; we shall, therefore, conclude our notice of it with a translation of his remarks upon hydrocele,

which have been selected at random, to afford the reader some idea of the manner in which his task has been executed.

"Hydrocele may be divided into several species, namely: first, into *hydrocele by infiltration*, which is nothing else than œdema of the scrotum, and which demands no particular operation for its removal; secondly, into *encysted hydrocele*, which consists in the development most frequently of one or more cysts along the course of the spermatic cord, and which requires the same treatment as similar diseases in other parts of the body; thirdly and lastly, *vaginal hydrocele*, which is seated in the vaginal tunic, and presents itself in several forms. Thus, the tumor may communicate with the peritonæal cavity, as happens when the canal originally existing between these two sacs is not obliterated: in this case the disease forms what is termed *congenital hydrocele.* Again, the vaginal tunic, instead of presenting its ordinary character, may be thickened, lardaceous, cartilaginous, or even osseous; the testicle itself may be altered, and so constitute hydro-sarcocele; in short, the malady may be complicated with varicocele, hernia, and other affections.

1.—*Hydrocele in the Adult.*

"Besides local applications and blisters to the scrotum, to promote the absorption of the effused fluid, numerous operative procedures have been recommended for the cure of this disease, which may be thus stated: puncture, incision, excision, cauterization of the sac, the introduction of the seton or other foreign bodies, and lastly, injection.

I. *Puncture.*—This operation may be performed either with a small trocar or a lancet, the former being preferable.

The integuments should be previously put on the stretch and drawn away from the testicle. The patient sitting on a chair or lying upon the edge of the bed, the tumor is grasped with the hand, so as to make the anterior and inferior part of it project between the thumb and forefinger, while the upper and back part, corresponding to the cord and testicle, is concealed in the palm of the hand. The trocar is then to be plunged from below upwards through the antero-inferior part of the tumor, if we adopt the method of Sabatier, or upwards and slightly backwards, if we follow that of Boyer; the perforator being now withdrawn, the canula is pushed on until we have reason to believe that it will not escape from the vaginal tunic during the evacuation of the fluid. If this precaution be neglected, the fluid might be extravasated into the cellular tissue of the scrotum.

II. *Incision.*—The patient being placed upon his back, the surgeon, standing on the right side, stretches the integuments with the left hand, and with a convex bistoury makes an incision from above downwards in the direction of the longest diameter of the tumor. Arrived at the sac, he makes a slight opening into it, which is afterwards to be enlarged in the line of the external cut, by carrying the instrument upon the index-finger or upon a grooved director. The operation being completed, the wound is filled with lint, which is to be kept in until suppuration is established. As a modification of this method we may mention that of Franco, which consists in an incision of about three inches in length, and the introduction of a *tent* of lint, charpie or sponge, steeped in rose oil. Its object, as in the preceding case, is to produce suppuration in the sac.

III. *Excision.*—Of this there are not less than four meth-

ods. In that of Douglas, the patient lying on his back as in the operation by incision, the skin of the scrotum is to be divided in such a manner as to form an oval flap, the great diameter of which extends from above downwards. This flap being dissected up and held out of the way, the sac is laid open in its whole length, after which it is dilated with the skin, and removed as far as the base of the spermatic cord. The edges of the wounds are next to be approximated, taking care, nevertheless, to interpose some charpie to promote suppuration.

The operation as performed by Boyer consists in making a superficial incision through the whole length of the anterior and middle part of the tumor, and in separating the skin from the vaginal tunic, the dissection being prolonged nearly to the point of reflection of the membrane over the testicle. Care should be taken not to cut away the cellular substance too closely to the skin, otherwise gangrene might ensue, and to avoid opening the sac before it is completely exposed. The separation being effected, the vaginal tunic is laid open through its whole length, and excised with a pair of scissors as near as possible to the testicle.

The third method is that of Dupuytren, who divides the skin like Boyer, or excises it like Douglas, according as it is necessary or unnecessary to raise a flap of integuments; the edges of the incision are then drawn back, by compressing them with the thumb and forefinger of the left hand, enucleating thus the testicle and vaginal sac. The operation is completed by opening the cyst and cutting it off with a pair of scissors.

The method of Kinderwood, the fourth and last that we shall mention, differs so much from the preceding that it may be regarded as a new operation. Having made a large puno-

ture in the tumor with an abscess lancet, a pair of dissecting forceps is to be introduced into the aperture, with which a small portion of the sac is seized, and snipped off with a bistoury or pair of scissors.

IV. *Cauterization.*—This is performed by applying upon the anterior and lower part of the tumor a bit of caustic potassa large enough to produce an eschar of the size of a franc piece. As soon as there is reason to believe that its action has extended to the vaginal tunic, it is to be carefully removed, and the part dressed with some simple unguent. In eight or ten days the slough separates; in from five to six weeks the vaginal tunic is said to exfoliate, and the cure is finally completed by the manner in which the membrane adheres to the testicle.

V. *The Seton and other Foreign Bodies.*—Pott's method. He made at first a puncture in the ordinary manner at the most dependent part of the tumor, with a trocar three lines in diameter. Through the canula of this instrument he next introduced a silver tube five inches long, to the upper part of the vaginal tunic, so as to be felt there; a probe, six inches and a half in length, having at one end a fine steel trocar, and at the other an eye, armed with a seton, was then conveyed through the latter canula, and brought out at the place already specified. This method seems to comprise the germs of M. Belmas' instruments for his operation for inguinal hernia.

Monro used to leave the trocar-canula in the part; others, however, substitute a piece of bougie; Baron Larrey employs a gum elastic catheter, and M. Reynaud a bit of hemp, with injections, &c.

VI. *Injection.*—As the manner of performing this operation is familiar to every intelligent practitioner, we deem it

unnecessary to translate the description of it by M. Malgaigne. Three accidents are enumerated as liable to attend this method: 1st. It sometimes happens during the operation that the canula slips out of the vaginal tunic, thus allowing the fluid to pass into the cellular substance of the scrotum. This accident, which can always be avoided by proper care on the part of the surgeon, is of a serious character, as it is liable to be succeeded by gangrene, unless the irritating fluid be immediately evacuated by free incisions. 2nd. The point of the trocar occasionally wounds one or more of the branches furnished to the scrotum by the internal or external pudic arteries, the epigastric, or finally the spermatic. In most cases, however, these branches are so small that their lesion is not of much consequence. 3rd. The instrument may enter the testicle. This accident is also rare, and usually produces no other inconvenience than a slight pain."

The operation is occasionally followed by violent inflammation and suppuration; and in one instance the writer of this article knew it to be succeeded by fatal tetanus. The patient, a stout, robust mechanic, about twenty-six years of age, whom he saw twice in consultation, was doing apparently very well during the first eight days after the operation; at this time, owing to exposure to cold, symptoms of the disease in question manifested themselves, and in less than twenty-four hours the man expired. Upon examination after death the vaginal tunic was found considerably thickened, and its cavity containing several ounces of sero-sanguinolent fluid with a small quantity of unhealthy looking pus. No adhesion had taken place between the opposite sides of the sac. A case of a similar kind is alluded to by Sir George Ballingall, in the second edition of his admirable "Outlines of Military Surgery," published at Edinburgh in 1838.

On the whole, our author seems to give injection a decided preference over the different methods we have described. When this operation, aided by compression, fails, I would suggest, he says, an attempt to obliterate the vaginal tunic by puncturing it with pins, as M. Bonnet does the sac in cases of hernia. He does not state that he has tried this plan, but thinks analogy warrants the belief that some good may be expected from it.

2. *Congenital Hydrocele.*

"The communication between the vaginal sac and that of the peritoneal forbids, for the most part, the employment of the procedures pointed out as applicable to ordinary hydrocele.

Viguerie's Method.—The patient lying on his back, the surgeon pushes the contents of the vaginal tunic into the abdomen by a sort of taxis, and applies upon the inguinal ring a herniary bandage or truss, which thus closes it up and prevents the fluid from re-descending.

Method of Desault.—This consists in puncturing and injecting the congenital hydrocele. Thus contrary to Viguerie, Desault forces the fluid as much as possible into the vaginal tunic, punctures the scrotum in the ordinary manner, and then, having ascertained that the intestine is fairly within the abdomen, he directs a trusty assistant to compress the external ring by means of a small pad, while he throws in the injection as in common hydrocele. To prevent any of the fluid afterwards from entering the peritoneal cavity, or the abdominal viscera from protruding, a truss should be worn until the cure is completed.

Of these two methods that of Viguerie is the more simple,

as well as the less dangerous, and ought therefore to be preferred. Even the advanced age of the patient does not preclude the hope of a speedy obliteration of the ring. The methods of MM. Belmas and Gerdy, but above all that of M. Bonnet, for the radical cure of hernia, are likewise perfectly applicable here."

Such, to use a mercantile expression, is a fair sample of the work before us. Embracing the whole field of operative surgery, or, as the French term it, operative medicine, the accounts of the various mechanical procedures must necessarily be very brief, and, in many instances, imperfect. Hence one great objection to these manuals is, that they are calculated rather to mislead the student than to guide him to what is truly useful; in other words, their inevitable tendency is to create confusion and embarrassment as to what should be selected or what rejected. Many of the operations described by M. Malgaigne are no longer performed by the best surgeons, and they should therefore have been excluded from a work professing to be strictly elementary. Still, with all its blemishes, it is a very good production, which both the student and the practitioner may consult with advantage.

S. D. G.

ART. III.—*J. F. Henkel's Anleitung zum Chirurgischen Verbande. Umgearbeitet und mit vielen Zusatzen versehen von Dr. J. C. Stark. Von neuem bearbeitet und mit Zusatzen vermehrt von J. F. Dieffenbach, M. D.*

An Introduction to the Methodic Application of Bandages. By J. F. HENKEL, M. D. With forty copper-plates. 12mo. pp. 540. Vienna: 1840.

The first edition of this work was published in 1756, under the title of "Instructions for the Methodic Application of Sur-

gical Bandages," in a small duodecimo volume, and has ever since been the standard authority for reference with German students. The fifth edition, greatly improved and enlarged, was issued in 1790, a short time before the author's death. It reappeared in the early part of the present century with emendations and copious additions from the pen of Dr. Stark; and the edition now before us was published a year ago by Dr. J. F. Dieffenbach, of Berlin, well known as one of the most distinguished surgeons of the age. The text, which is closely printed, embraces five hundred and forty duodecimo pages, and is illustrated by forty plates, executed on copper in the best style of the art. That this work should have sustained itself for nearly a century in the estimation of our German brethren, is not only a striking evidence of its intrinsic value, but an anomaly in the history of medical authorship. This is the more surprising when it is remembered that the amount of competition in this department has by no means been slight; for, besides the essays of Kühn, Hofer, Zauner, Bernstein, Theden, Böttcherr, and Köhler, which all appeared within a very short time of each other, towards the close of the last century, the elaborate manuals of Schreger of Erlangen, and Benedict of Leipsic, which were issued, the one in 1820 and the other in 1827, have had an extensive circulation, and are justly regarded as among the most valuable contributions to surgical science within the last twenty years. About the same period also that the latter work appeared, a translation of the celebrated production of M. P. R. Gerdy of Paris—"Traite des Bandages et Appareils de Pensemens"—was published at Weimar, with copious notes by the German editor. Thus it is evident, as was before intimated, that the treatise of Henkel could have maintained its character as a standard authority, during the long period above mentioned,

solely by its intrinsic excellence, and not because of an extraordinary concurrence of circumstances; though doubtless not a little of the reputation which it at present enjoys is to be ascribed to the valuable additions of its two editors, Stark and Dieffenbach.

As it now presents itself, Henkel's "Introduction" affords a complete digest of the existing state of the art of bandaging, and may be considered as the most able production of the kind in any language. It is far superior to the little treatise of Mr. Cutter, and should be in the library of every intelligent surgeon. It is worthy of being well translated, and would doubtless be highly acceptable to the practitioners of this country, to whom we can safely recommend it as a useful and satisfactory guide.

S. D. G.

BIBLIOGRAPHICAL NOTICE.

The Dublin Dissector, or Manual of Anatomy, &c. &c., together with the Elements of Pathology. By Robert Harrison, A. M. M. B. T. C. D. &c.; with additions by Robert Watts, Jr. M. D., Professor of Anatomy in the College of Physicians and Surgeons in the city of New York. 12mo: pp. 541. New York, Philadelphia, and Boston: 1840.

The above forms the title page to a work which we have recently met with, and which, we believe, is the fourth edition of the "Dublin Dissector" that has issued from the American press.

In so far as the text is purely a descriptive anatomy, we have always considered it one of the best dissecting room manuals which we possess—that the arrangement is very

well adapted to the convenience of the student, presenting as it does, a description of the different parts in the order in which they are met with on dissection—and that the style is perspicuous, and perhaps not too prolix for the patient laborer. But candor compels us to add, that we consider those parts of the work referred to as "Elements of Pathology," as superfluous and burdensome. At the table, the student wants a description of the parts which he is dissecting, as concise as is compatible with perspicuity; and any attempt to draw the mind from what should be the special and exclusive objects of his study at the time, by giving an account (however short) of the different accidents and morbid changes to which they may be liable, serves only to produce confusion, by multiplying the objects of attention. If he be systematic in his labors, he wants to study *Healthy Anatomy* alone in the dissecting room; and give Surgery and Morbid Anatomy his whole attention at other times.

The additions which the American editor has made, consist in a classification of the muscles, according to the parts on which they act; which, we think, will greatly tend to "impress upon the minds of students their number, situation, and functions"—in an account of the weights and measures of the different organs; which is perhaps the most valuable "addition," unless it be the "varieties" of the arterial system—in the "varieties" of the muscular, arterial, and venous systems —a list of the muscles arising from, and inserted into, each individual bone, in connection with its description—an enumeration of the various fractures to which the bones, and dislocations to which the articulations, are liable—and an extension of the "Elements of Pathology." Against these latter may of course be urged the same objection that was mentioned in reference to the text. The parts of the book, however, which we deem objectionable, do not so materially detract from its value, but that we consider it, all in all, one among the best works that we have upon the subject.

G. W. B.

Selections from American and Foreign Journals.

On a New Species of Torticollis. By M. Bouvier.—This species of torticollis differs altogether from the acute or chronic muscular form, and from the spontaneous luxation of the atlas and axis, three states with which it has been confounded. It has its seat in the articulations of the first cervical vertebræ, and may perhaps be designated by the term articular torticollis. The lateral articulations, right or left, of the first cervical vertebræ, and especially of the atlas with the axis, are, so to speak, the focus of articular torticollis, which consists in a peculiar form of inflammation of the synovial capsule and fibrous tissues of these articulations. The essential characters are: 1. A position of the head and neck, similar to that produced by contraction of one of the sterno-cleido-mastoid muscles, namely, lateral flexion to the right or left, and rotation of the face to the opposite side. 2. A pain felt towards the top and sides of the nape of the neck, sometimes on the lateral and posterior parts of the cranium; arising spontaneously, or in the movements of the neck. 3. Complete relaxation of the sterno-cleido-mastoid of the affected side, and an equal tension of the muscles of the neck both left and right. 4. Stiffness and pain in all or any of its movements, notwithstanding the preservation of the articular connexions of the cervical vertebræ, and the integrity of the muscles. 5. Absence of swelling, and of sensibility on pressure. 6. Atrophy, or arrest of development of the side of the face, which answers to the inclination of the head, when this has lasted a certain time.

This disease presents two successive states or periods, the acute and chronic. It is often produced by cold, sometimes by sudden distension of the ligaments. M. Bouvier thinks it very important to detect this disease, as the section of the muscle would be useless and rash, but reserves to another occasion the proceedings which he has found useful.—*Brit. and For. Med. Rev., from l'Experience.* 17 *Septembre*, 1840. *Med. Exam., Feb.* 27, 1841.

On a new method of Operating for the radical cure of Hernia. By M. Velpeau.—The author of this memoir, after examining at length the various means hitherto employed for the cure of hernia, states that he finds none of them at all efficacious; he therefore determined to try another method. Convinced from repeated experiments that injections with tincture of iodine produced in the serous membranes an adhesive inflammation, slight and scarcely dangerous, he attempted the radical cure of hernia by these injections. Three patients were operated on by him in the years 1836 and 1837, but the difficulties of a first operation, and the vagueness of the results, still left him in doubt, and he afterwards employed a method in two cases consisting of three distinct steps: subcutaneous puncture, scarification of the interior of the sac, and compression. He took the idea of scarifications from the ancients, or rather from what he had himself advanced in the year 1832. Twice that year he had placed great confidence in them, and only discontinued their employment when he perceived that danger was likely to ensue to the patient from opening the sac. These dangers seemed no longer likely, when M. Guerin gave the hint of the possibility of penetrating to the bottom of the cavity, by a simple puncture of the integuments, and expressed in his memoir his desire of applying his subcutaneous incisions to the radical cure of hernia. M. Velpeau has performed the necessary scarifications in this manner. With regard to the compression, he applies it not only to the external abdominal ring, but over the internal ring, and in the inguinal canal itself. He employs the celebrated bandages of M. Fournier of Lempdes, which he states have more than once sufficed for the radical cure of hernia.

M. Velpeau successfully operated on a patient in the following manner: Having introduced the index-finger for some lines in depth into the external abdominal ring, he pushed the integuments before it, and passed a sort of lancet over the nail of this finger, pushing it obliquely as far as the iliac fossa; then withdrawing his finger from the ring, he brought the edge of the instrument against the iliac walls of the abdomen, which he supported with the other hand, and then scarified them in various directions, taking especial care to avoid the epigastric vessels. The lancet was then withdrawn at the exact spot where it had entered, and the operation was complete, only a few drops of blood having been lost. The patient was taken to bed, no accident occurred, the small wound cicatrized by the next day, the bandage of Fournier was applied on the third day, and the man has since walked and conducted himself as if he had never been afflicted.

Encouraged by this result, the patient demanded a similar operation on another hernia. It was performed, and at the end of ten days he was convalescent. He has since continued quite well, and has remained as a cook in the hospital to show the radical cure to the profession.—*Ibid. From Bulletin General de Therapuetique.* 15 *et* 30 *Aout*, 1840. *Ibid.*

Rhinoplastic and Cheiloplastic Operations. By J. Pancoast, M. D., Professor of Anatamy in Jefferson Medical College, one of the Surgeons of the Philadelphia Hospital, &c.—Jno. Glover, æt. 50, a native of Bridgewater, in England, lost, seven years ago, as he states, by phagedenic ulceration, all the soft parts of the nose, the whole of the upper lip, the turbinated bones and septum of the nostrils. Though now in good health and robust, he appears an object of deformity so disgusting to himself, that he has voluntarily exiled himself from his family and home. On examination it was found that the teeth with their sockets had all disappeared from the upper jaw, and nearly all from the lower; a small strip of gum, a quarter of an inch wide, stretched across, and formed the only separation between the lower lip and the ends of the ossa nasi.

In consequence of the destruction of the upper lip and the sockets of the teeth, the chin came high up on the face, and the lower lip fell on the margin of the nasal cavern.

The cicatrization following the destruction of the upper lip and nose, had drawn in the angles of the mouth, so as to leave a round opening of not more than three quarters of an inch in diameter when the mouth was opened to the widest extent.

Jan. 20th, an operation was performed before the class of the Philadelphia Hospital, for the enlargement of the mouth and the reconstruction of the upper lip. The mouth was widened after the manner of Dieffenbach, for about five-eighths of an inch at each angle, by removing a slip of the muscle and integuments in front of the mucous membrane, and then dividing the membrane in two, and binding each half by suture over the raw edges of the new lip. A flap of integument was then raised from the muscles of each cheek, an inch in breadth and an inch and a half in length, and brought down and fastened together by hare lip suture in front of the gum, which had been previously made raw with the knife. The operation succeeded. The new lip became

perfectly adherent to the gum, and presented a natural appearance.

March 27. Proceeded to the Rhinoplastic part of the operation. A flap of the integuments was raised from the forehead, nearly of a pyramidal shape, three inches long and three inches broad at the base, having an adherent strip raised from the scalp on the middle line an inch and a half long and five-eighths of an inch broad, to form the columna of the new nose. The flap was dissected up, remaining attached only by a pedicle between the eyebrows, and twisted so as to present its raw surface over the opening of the nose. The integuments of the forehead and scalp were then brought together with hare lip sutures, leaving only a small opening to fill up by granulation, the size of a twenty-five cent piece. A grove was cut along the sides of the nasal cavern into which the flap of the new nose was stitched. The new columna from the scalp was bent in, and fastened with hare lip pins to the upper margin of the gum, and the new lip formed on the 20th of January, and which were freshened with the knife for its insertion. The entire operation lasted a little over an hour, and was borne by the patient without a murmur. 31st. The dressings were removed, the wound in the forehead and scalp were found united, except in the middle space, by first intention. The new nose and the column had also united every where by first intention, and retained in a great degree the natural prominence. The patient suffered but little pain or inconvenience since the operation, and has the fairest prospect of having his hideous deformity entirely removed. The details of this case will be hereafter more fully given, as well as those of another case in which the operation was performed by Dr. Pancoast, on the 9th of January last. In the latter instance, the nose which had been lost by scrofulous ulceration, attended with a destruction of a considerable part of the hard palate, was rebuilt by flaps from the cheeks, and the operation has been so completely successful as to require a careful inspection to distinguish it from the natural organ.—*Med. Exam., April* 10.

Anatomical description of an Hermaphrodite, known by turns under the names of Marie-Dorothu Derier, and Charles Durge. By Professor Mayer, of Bon. Translated from the French, by O. H. Partridge, M. D., of Philadelphia.—This remarkable individual whom we are about to describe, has been known to the medical community for more than thirty

years, at first by the name of Marie-Dorothuú Derier, afterwards by that of Charles Durgé. Born at Berlin or Potsdam in 1780; he was baptized as a female child. At twenty years of age he still continued to wear the clothing and follow the occupation of females moving in the same grade of life; it was about this time that he was first spoken of in the public journals. Hufeland made mention of him in his journal for 1801; and notwithstanding the perspicacity of this patriarch in German medicine, he gave it as his opinion that the attributes of the female sex were predominant with Derier.

During the years 1816 and 1817, Derier, who had learned to model in wax, visited the different universities in Germany, and travelled into France, Holland, and England, where he was employed in most of the anatomical museums. He was examined by a great number of medical gentlemen and men of science; among whom were Kopp, Kansch, Marsina, Rosenmüller, Osainder, Lawrence, Green, and the faculty of medicine in Paris, the most of whom gave it as their opinion that he was of the masculine sex. Hufeland, whom we have already mentioned, Gall, and Brooks declared in favor of the feminine. While others, and among them Drs. Schneider and South, Schmitmüller and Ritgen, were of the opinion that Derier belonged to neither sex; the different parts of the body were considered as appertaining to the masculine and partly to the feminine. The pelvic basin only was considered by most of them as the basin of the female; notwithstanding, the anatomical inspection, as we shall see, has demonstrated to the contrary.

Supported by the opinions of a majority of physicians, who had pronounced him of the masculine sex, and stimulated by a sort of vanity, Derier assumed the dress and mode of living usual among men, and caused himself to be called Charles Durgé. Under this name he continued to live in Bon, from 1820 to the time of his death, which occurred in March, 1835. During the latter period of his life he was constantly under the observation of M. Mayer. Durgé, said he, was pleased to be in the society of males, but evinced a greater predilection for that of females, yet entertained towards neither of them any amorous propensities. His character was a *melange* of the man and the woman: on the one part, he had courage unusual to one of his size—he possessed great physical strength, and loved to rule; and, on the other, distinguished himself for great manual dexterity, as his works in wax were always well and faithfully made. He was animated with sentiments mild and affectionate, yet at the same time possessed a certain spirit for contradiction.

During the last years of his life there was no evidence of a catamenial discharge from the genital organs, as there had been two or three times during his twentieth year, yet he was subject to epistaxis and hæmorrhoids, phenomena which were attributed to his manner of living, as he indulged freely in the use of wine, coffee, and spirituous liquors. Durgé never had pollutions or ejaculations of semen. His voice became more hoarse and strong as he advanced in age; his beard was light and thin; all his hair had fallen off, with the exception of a few locks that hung long and pendant from behind the occiput. His head and face presented the aspect of an old woman; the teeth also were nearly all gone; neck short; chest fat and rotund; arms and legs slightly covered like those of the female; his height, which was taken at the time he was thirteen years of age, when he had arrived at his full stature, was five* feet. At thirty-eight there was a complete change in his constitution, and he became very gross and portly; he enjoyed most excellent health, with the exception of a nervous fever, which attacked him when he was about forty years old. He continued thus to live until three years previous to his death, when his memory failed, and he lost all taste for his works in wax. In the month of March, 1835, his countenance assumed a haggard aspect for a number of days, at the end of which Durgé or Derier succumbed suddenly of a violent attack of apoplexy. The autopsy was made by Professor Mayer, one of the most distinguished anatomists of Germany. M. Mayer was exceedingly minute in his examinations, which might have been thought by some unnecessary, had they not been justified by the importance of the subject.

We have thought it our duty to report faithfully the description of the professor in Bon, because it has thrown much light upon the true nature of an individual who had enjoyed a certain celebrity in consequence of the great difficulty that had existed to determine to which sex he belonged. It proves to us, moreover, that there does exist among the human species, true hermaphrodites,—that is, the organs male and female in the same individual.

Autopsy Exterior.—Length of the body 5 feet; length of the superior extremities from the condyle of the humerus to the end of the middle finger 2 feet 4½ inches; inferior extremities from the great trochonter to the heel 2 feet 10¾ inches.

*We here make use of the French measure, which the reader will recollect is a little longer than the English—12 French inches being equal to about 13 English inches.—*Tr.*

Form of the head feminine, small, os frontis narrow and low; occiput prominent; hair thin, and covering only the occipital region; beard very thin; neck short; larynx slightly projecting; breadth of the shoulders 1 foot 2 inches; superior portion of the thorax narrow and short; abdomen of good length; breasts very well developed, but the nipples shrunk; pelvis not large; pubien arch of a medium width; curve of the arms and legs like those of the female.

Description of the Internal Organs.—Tongue short, large, and ovoid; papilla long and of a natural size; os hyoides small, but well developed; the thyroid cartilage forms but a slight projection, is very narrow, but of a tissue sufficiently hard throughout; thyroid gland quite large; cornua thyroidea, superior and inferior, very long; the ligaments of the thyroid and cricoid cartilages, strong and well developed; epiglottis short and large; cavity of the larynx moderately large, nevertheless, the vocal chords, superior and inferior, are sufficiently thick and strong; trachea narrow, and its cartilages more soft than those of the male. Lungs small; the right lung is divided only into two lobes by a fissure incomplete and not very deep; the left also is divided and adherent to the parieties of the thorax, the pericardium and diaphragm; the right lung, with the exception of a few arthritic tubercles of the size of peas, are healthy; the left contains a large number of these concretions, particularly on the internal edge of the superior lobe. Heart fat, large, round, and resembles the heart of a female; its structure is normal, and the muscular tissue well nourished; the division of its vessels from the arch of the aorta, natural. The stomach is of an oblong form and not very muscular. Spleen small, and only 2 inches 10 lines in length, and 1 inch 8 lines broad. Liver of a medium size, biliary ducts contain a large number of calculi. Intestinal canal normal; cœcum large; appendicula vermiformis large. Mamma tolerably well developed, the glandular granulations are wanting, but in their place are found a quantity of small globules, fatty, and of a reddish yellow appearance; the nipple projects but slightly, and is pierced by a great number of minute holes, which are evidently sebacioas follicles, and situated only about the areola. Kidneys oblong, thin, and small; renal capsules normal.

The encephalon is small, and presents entirely the form and organization of that organ in the female; its form is round and symmetrically convex; lobes not prominent, convolutions numerous, but narrow; dura mater and pia mater are of an extremely delicate texture; pons varoli and medulla ob-

longata small; the nerves, and particularly the fifth pair, are more delicate than in the male; the cerebellum is also small, and its right hemisphere in particular is much less voluminous; in fact all the lobes appear to have been arrested in their development; the lamina are numerous; the cerebrum presents also a want of development in its right hemisphere, as is indicated by a depression at the lobes; corpus callosum short; thalami nervorum opticorum, corpora quadrigemina, pineal gland and corpora striata are below the natural size. *Cranium* small; its bones thin but solid; sutures not effaced, bones of the face tolerably well developed; ossa maxillaria superiora destitute of teeth; in the ossa maxillaria inferiora two molar and three incisors still remain; mastoid processes large and of a very firm texture; os frontis slightly projecting, but the summit of the cranium and the occiput which contain the posterior lobes are quite large; the prominences corresponding to the cerebellum, not well developed, the left salliant and the right quite smooth; vertebral column regularly formed, but the vertebræ, especially the cervical and thoracic, are of rather delicate texture; ribs brittle and thin; the 3d, 4th, 5th, 6th and 7th on the left side have been fractured, the four first in two places, the last in only one; the fractures now are consolidated and quite firm; the pleura adheres at three different points, and also to the lungs; the sternum, particularly its superior portion, is quite large; thorax uncommonly narrow, more especially its middle portion, while its lower section is also of good size.

The bones of the superior extremities are proportionally well developed, but present a feminine character, particularly the clavicle and scapula; the first is short, rounded, thin, and very curved—the fore-arm forms with the arm an angle from without, a little unusual; the hands are small like those of the female; lumbar vertebra rather small, sacrum large; sacro vertebral angle slightly prominent. The bones of the pelvis are strong and solid, and in general narrow, presenting in an evident manner the configuration of the pelvis of a male; its greatest transverse diameter from the crest of one ilium to the other is 9 inches; from the anterior superior spinous process of one ilium to the opposite it is 7 inches and three lines; transverse diameter of the superior strait 4 inches 5 lines; antero posterior 3 inches 4 lines; oblique diameter 4 inches; transverse diameter of the inferior strait 3 inches 3 lines; antero posterior 2 inches 6 lines; symphisis pubis long and narrow; the arch of the pelvis is like that of the male, and forms an angle of 65 degrees; the lateral portions of the

ilium have a vertical direction; cotyloid cavities are flat and turned forward; sciatic tuberosities look downward and inward; the whole of the pelvis is a little unequal and oblique, inasmuch as the right half of the small basin is smaller and more narrow than that of the left, and the sacro vertebral angle greater towards this side; osseous tissue of the inferior extremities very delicate; neck of the femur very short; trochanters feeble; knees a little crooked from within.

Description of the genital organs in particular.—Mons veneris slightly elevated; the hair that cover it are thinly scattered and do not extend as far as the umbilicus; perineum and anal region also only partially covered. Length of the penis to the glans two inches; the glans itself 9 lines; penis mostly covered by the mons veneris; corpus cavernosum equally well developed, presenting, each one, a perpendicular diameter of eight lines, and together a transverse diameter of four lines, divided by a septum; corpus spongiosum wanting; the prepuce covers but about half of the glans; a little on the under side is found an opening, *fossette naviculaire*, or small canal, which represents the canal of the urethra closed, and is formed of two folds of skin, stretched backwards, and which resemble the nympha; this small canal leads to an opening, round, and about the size of a goose quill; the external labia, the skin of which is wrinkled, forms the posterior edge of this opening, and the mucous tissue, smooth and glossy, its anterior; at the anterior or superior border are to be seen two longitudinal folds of skin, between which is a small canal representing the canal of the urethra, and runs in a direction inward; at the edges of the internal labia are also seen the vestiges of the carunculæ myrtiformis; the circular opening continues, with a vestibule of eight lines in length, and merges above into the canal of the urethra, and below into a larger canal which resembles a vagina; the septum that divides at this place the vaginal and urethral canals is semilunar in form, and is placed horizontally; the canal of the urethra is near the racine of the penis, and is at the same time surrounded by the prostate, which is firm, but not very thick; neck of the bladder, and the bladder itself, are regularly formed; the latter particularly is very muscular, and its membranes dense and strong; the mouths of the ureters present nothing singular. The canal which represents the vagina is composed of a delicate mucous tissue, and has but few muscular fibres, and is partially filled with a greenish mucous; at its commencement it is surrounded by a tissue, rectiform and vascular, and easily separ-

ated; this tissue is composed mostly of varicose veins, which continue upwards between the vagina and uterus, and finally disappear; at this place are seen a number of veins coming out, and a large artery entering. Length of the vaginal canal two inches eight lines; diameter of the external orifice, where it is the largest, ten lines; posteriorly, it is only six lines; in its internal surface anteriorly it is a little currugated,—farther back, smooth, but garnished with a great number of small warts, where are to be seen also radiated or star-formed cicatrices. The vagina terminates interiorly by a narrow portion or sort of isthmus of a spongy texture, and of from four to six lines in length; behind this isthmus, which represents the imperforate orifices of the uterus, is found the uterus itself, which continues upwards with the oblique direction of the vagina, behind and between the bladder and rectum, with a slight declination from right to left, so that its base is seen on the left side of the bladder, at the point of union between the body and base of this organ.

The uterus is extremely narrow; length two inches six lines; neck quite small, yet it is not difficult to distinguish that it has a neck, body, and fundus; there is nothing remarkable in the internal surface, except some small folds and a number of small spots of a yellowish brown color; its cavity, which contains a gelatinous mucous, is much narrower than that of the vagina, and will hardly receive a goose quill; its fundus is a little larger, and will measure nearly six lines; the body of the uterus exhibits a few currugations or folds, and a number of hydatiforme vesicles, mixed here and there with yellow spots.

The two Fallopian tubes open exactly at the fundus of the uterus, but in length are unequal; the left tube being three inches four lines, and the right four inches four lines; the tube of the canals is small, but perfectly permeable to the abdominal opening, which is imperforate, and where are discovered a number of hyatids; corpus Fimbriatum plainly to be seen; the muscular fibres are very strong which are given off from the fundus of the uterus, under the peritoneum, and which pass over its anterior portion and the bladder in a direction towards the inguinal ring, and finally are lost in the adipose tissue of the external organs. In the right side, near the open extremity of the Fallopian tube, is a small, flat, ovoid body, from which are given off a bundle of vessels and muscular fibres, and entirely enveloped in the peritoneum; its form is that of a small almond; its parenchyma is evidently composed of a yellow, soft, and filamentous tissue, resembling ex-

actly that of the testicle; the vesiculæ seminales may be easily dissected, and in the cord are to be seen the artery and vein. On the right side, behind and a little without the abdominal opening of the Fallopian tube, there is also a small, round, flat body enveloped in the peritoneum, but its tissue is gelatinous, and composed of small grains, so conglomerated as to resemble rather an ovary than a testicle."

We here see the mixed attributes of a male and female; on the one part a testicle slightly atrophied, also a penis and prostrate gland; on the other, a vagina and uterus with its Fallopian tubes, and on the left side a body analagous to an ovary. M. Mayer has also observed as a fact worthy of special notice, the very slight development of the hemispheres of the cerebellum, an anomaly that Gall predicted, when Derier or Durgê was twenty-five years of age, in consequence of the indifference exhibited by him for either sex. It is also a fact, that on the right side, where the cerebrum, and particularly the cerebellum, were imperfectly developed, there exists in the abdominal cavity but one thing doubtful, that is, the body which was supposed to be an ovary; while on the left side there is certainly a testicle, although not of full size.

Finally, M. Mayer adds, he never has observed this defect in the organization of the cerebellum in any other case of hermaphroditism, either in the male or female.

New method for the radical cure of Varix, and especially of Varicocele.—By M. Ricord. After pointing out the errors of believing that varicocele affects only persons of twenty or thirty years old, and imagining it to be a common consequence of gonorrhea or epididymitis, whereas in fact it is more generally a predisposing cause of the latter disease, and instead of being produced by it, is more often cured by it; M. Ricord proceeds to describe his mode of operation.

"The hair must be shaved from the genital organs on the side to be operated on, and the veins must be dilated by making the patient walk about a little, or by enveloping the scrotum for a few hours in hot poultices, or by fomentations. This being done (though if the swelling is at all times considerable these precautions are unnecessary) the vas deferens must be separated from the mass of veins, and the latter being taken up with a fold of the scrotum, a flat lance-shaped needle, armed with a double-looped thread must be passed beneath them. When the needle has been passed completely

through the skin from one side to the other, the veins are to be let go, the skin alone being now held up, and then a second needle, similarly armed, must be passed through over the veins, entering at the same hole by which the first needle was thrust out, and passing out at the same hole by which the first entered. The bundle of veins is thus fixed between two double threads, of which one passes over and the other beneath it. The ends of each double thread on each side are then to be passed into the loop of the other, and now, by drawing these ends in opposite directions, the vessels are tied beneath the skin. By this kind of ligatures the vessels may either be suddenly constricted or be tied gradually in a manner something like that adopted by M. Breschet, or most conveniently by a properly adopted *serre-nœud* after the fashion of a tourniquet.

"It is usually from the tenth to the twentieth day that the vessels are divided by this means, and their division may be easily recognized by the freedom with which the ligatures may be drawn from one side to the other, without being, as they were before, retained by the parts which they inclosed. It sometimes happens, that at the instant of the first constriction the patient suddenly feels rather an acute pain in the course of the spermatic cord; it is usually less severe than in the other operations for the same purpose; and though it often occurs at the successive constrictions, yet it has never been long continued, nor given rise to any accident. It is sufficient to keep the scrotum raised, to employ some anodyne frictions on the inguinal canal or the lumbar region, or to apply some emollient poultices, to effect its removal. Sometimes a slight œdema of the scrotum supervenes, and I have twice observed rather a considerable serous effusion in the tunica vaginalis. In one patient, also, who went out of the hospital and in a few days after the operation exposed himself to great fatigue, a slight abscess formed in the cellular tissue; but with these exceptions there has been no important accident.

"It must be clearly understood, that if the patient is strong and plethoric, he is to be bled from the arm directly after the operation; that the horizontal position must be maintained till the vessels are cut through; and that the bowels must be kept open.

"Twelve patients have now been operated on in this manner at the Venereal Hospital, and in all the most complete and satisfactory result has been obtained. The three last of them were presented at the Academy of Medicine; two completely cured, and the third, who was operated on only two

days previously, still wearing the ligature and the *serre-nœud*.

"I have employed the same method for varices of the legs. I have already operated on nine patients, some having simple varicose swellings, and others varicose ulcers. In some a single ligature was sufficient, in others as many as four were applied. In none have there occurred any symptoms of phlebitis; the varicose veins have been obliterated and the ulcers speedily cicatrised; and in one of the patients whom I saw six months after the operation, there was no relapse. Still, however, I do not think that this method is likely to be so successful in all cases of varices of the lower extremities as in those of varicocele."—*Bulletin Generale de Therapeutique. Mars*, 1840. *Maryland Med. and Surg. Jour. Vol.* 1. *No.* 4.

Congenital Dislocation of the Humerus reduced after sixteen years.—By M. Gaillard, Surgeon to the Hotel Dieu, of Poictiers. The following is an abstract of a report to the Royal Academy of Medicine, drawn up by MM. Cannet and Bouvier. They consider the case as very curious, and without a parallel in the history of surgery.

Mademoiselle L. B. a few days after birth presented a deformity of the left superior extremity with much pain during its movements. The elbow was thrown from the body, the forearm semiflexed, and the hand in a state of pronation. During her infancy she could not bring her elbow near the trunk, nor raise her hand higher than the chin. The limb was often painful during her early years; but latterly the pain had only come on when the limb had been fixed in one position. When M. Gaillard saw her in 1836, she was sixteen years of age. He found in the posterior part of the shoulder a projection formed by the head of the humerus, which was placed in the subspinous fossa of the scapula, above the middle part of the spine, which was curved by the pressure it had undergone. On moving the arm, the head of the bone was felt rolling under the fingers, and it appeared abraded from rubbing on an irregular surface. The hand could not be brought to a state of supination. The forearm could not be extended on account of the permanent contraction of the biceps. Elevation and rotation of the arm were impossible.

On the 5th of January, 1837, the patient was placed on a stool, a cushion was applied to the external border of the scapula and maintained by two cords passing from its extremities and attached to two fixed rings. The arm directed hor-

izontally inwards was then submitted to the action of a weight of sixteen pounds. The weight was suspended at the end of a cord which passed through a fixed pully, and was attached to a bracelet fixed above the elbow. Time after time M. Gaillard increased the power of the traction, occasionally adding his efforts to the force exercised by the weights. The extension prolonged from twenty to twenty-five minutes was repeated on the 10th and 11th of January, each time bringing the head of the humerus nearer the glenoid cavity, and with no other inconvenience than a slight pain and swelling of the arm. On the 13th the head of the humerus was more moveable. Further traction was employed, the arm being always placed horizontally. The humerus yielded, glided over the scapula for the space of an inch and a half, and approached the glenoid cavity. M. Gaillard then seized the elbow, and by carrying it backwards and upwards he directed the head of the humerus downwards and forwards, then lowering the limb he felt the head pass under the acromial arch, and leap over a projection which appeared to belong to the articular cavity. The arm was now in contact with the trunk, it was sensibly lengthened, and all its movements could be executed with ease.

The dislocation, however, occurred again and again, and was as often reduced. The difficulty was to maintain the bone after reduction. This, however, was effected by careful bandaging. The patient suffered considerable pain at times, but was relieved by the application of leeches. From the first reduction to the entire cessation of pain, a period of more than two years elapsed; but the cure was then complete, the patient using the limb equally as well as the other.—*Bulletin de l'Acadamie Royale de Medecine. Maryland Med. and Surg. Jour. Vol.* 1. *No.* 4.

THE WESTERN JOURNAL.

Vol. III.—No. V.

LOUISVILLE, MAY 1, 1841.

A CARD.

Dr. Drake takes this method of informing those who may wish to address him on the subject of the Journal, or may desire his professional advice, that he will reside in Cincinnati, until the opening of the next session of the Medical Institute of Louisville, on the first of November.

MEDICAL CONVENTION OF OHIO.

A domestic affliction in the month of March, caused us to forget the preparation, for the last number of the Journal, of a notice of the meeting of this Convention on the 12th inst. at Columbus. It will be the fourth held by the physicians of Ohio, and will, we hope, be more numerously attended than either of the others. D.

RESIGNATIONS, APPOINTMENTS AND DEATHS IN MEDICAL SCHOOLS.

Change is a characteristic feature of our Medical Schools. Very lately several professorships have been vacated and most of them filled by new incumbents.

Our elder sister of the West, Transylvania, has lost Professor Smith by resignation and return to Baltimore—his chair not yet filled, but an election expected to take place in June. The late Professor, it is said, will co-operate in the reorganization of the University of Maryland. The Jefferson Medical College has experienced still greater changes. In the month of February, she lost, by death, the amiable and respected Dr. Green, Professor of Chemistry, one of the original members of the Faculty. Subsequently Professors Pattison and Revere resigned the chairs of Anatomy and the Theory and Practice, and accepted appointments in the University of the *City* of New York. These events were followed by a kind of reorganization of the former institution, and the appointment of several gentlemen, who have not hitherto belonged to incorporated medical schools. Dr. Pancoast being transferred to Anatomy, Dr. Mutter was appointed Professor of the Institutes of Surgery, and Dr. Randolph of Operative Surgery; Dr. Huston was transferred from Obstetrics to Materia Medica, and Dr. Meigs elected his successor, Dr. Dunglison being placed in the chair of Institutes; Dr. Mitchell was chosen to that of Theory and Practice, and Dr. Bache that of Chemistry. The Pennsylvania College about the same time lost her Professor of Materia Medica, Dr. Calhoun, and his place has not been supplied. D.

PROFESSOR CALDWELL.

Our colleague, Professor Caldwell, embarked for Europe, at Boston, on the 3d of April, in the steam ship Caledonia. He has gone thither, not merely to commune with the distinguished men of England and France, but commissioned by our Board of Managers to make purchase of books and apparatus for the Institute. The Professor will return in the month of October, in time to enter upon his official duties, on the first Monday of November. Meanwhile, from his well known activity, we may hope for several letters from him, with which to enrich and enliven the pages of our Journal. D.

DEATH OF PRESIDENT HARRISON.

We have seen the official report of the physicians who attended the President of the United States in his last illness. The disease of which this venerable patriot died, was acute pneumonia, produced, as the gentlemen suppose, by his exposure to a shower, in a morning walk. We

rather think, that the oceanic March winds of his new locality, so unlike those to which he had been accustomed, on the dry and sunny slopes of the Ohio, were to blame for a part of the mischief. The respectable medical gentlemen who attended him, thought him too weak to bear the lancet, and therefore did not employ it—a decision which their brethren at a distance are not perhaps at liberty to question. No *post mortem* inspection was made.

The President always felt himself in sympathy with the Medical Profession, to which he was originally devoted, and in the study of which he was engaged at the time of his appointment in the army, in 1791. Thirty years afterwards, when a member of the Legislature of Ohio, he rendered important aid to the writer of this article, in obtaining a charter and endowment, for a public hospital in Cincinnati. D.

MEDICAL HOAX.

During the early part of last month, two or three of our younger Physicians made a few Galvanic experiments on a criminal recently hung in this city, by which some slight muscular contraction was excited, though not quite as much as usual in such cases.

On this state of fact a correspondent of one of our newspapers proceeded to construct a report which, as we have been told, for we did not read it, represented the criminal as raised to his feet and made to walk about the room, performing a variety of pantomimic gestures. We perceive by the newspapers, that this report has been regarded as authentic, and as it stated that another might be looked for in our Journal, we feel it a duty to make that which we have just penned.

We cannot but regret, that our newspaper press should so often give utterance to fabrications intended to deceive the public. What is a hoax but a falsehood? And what is there in the publication of a falsehood that can be approved? If our brethren of the political press cannot make their papers interesting to their readers, without imposing on them the creations of imagination as facts relating to passing events, they would do well to abandon the profession for some calling in which the price of bread is not the sacrifice of veracity, or the practice of imposture. D.

GEOLOGICAL VOYAGE.

Dr. D. D. Owen, Geologist of Indiana, has fitted out a boat in Cincinnati, and commenced a voyage from that city to the mouth of the Ohio

river, for the collection of geological specimens. Starting from the oldest rock formation of the Ohio valley, and floating over the outcroppings, to the east, of many successive formations of limestone, shale and sandstone, the results of his exploration cannot fail to be interesting. He is desirous of the co-operation of all who live near the river or up its tributary streams; and we hope our readers in the region through which he passes, will make to him a liberal contribution of specimens,—noting in all cases, with accuracy, their localities; and when they send organic remains, crystallized salts, or ores, transmitting, also, specimens of the rocks in which they are found. Dr. Owen is one of your very best geologists, and deserves every kind of encouragement in his scientific enterprize. D.

RACIBORSKI'S ELEMENTS OF DIAGNOSIS.

We are happy to learn that a translation of this excellent work, decidedly the best on the subject in any language, will shortly appear from the pen of Mr. Hagan, a student of the Louisville Medical Institute. It will be comprised in an octavo volume of about 550 pages, and be published at an early period. From his intimate knowledge of the French language, and familiar acquaintance with the subject of the work, there is every reason to believe that Mr. Hagan will furnish a most excellent translation. S. D. G.

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ART. 1.—*Case of Axillary Aneurism for which the Subclavian Artery was Tied; with an Inquiry into the Nature and History of that Affection.* By S. D. GROSS, M. D. Professor of Surgery in the Louisville Medical Institute.

Daniel Monday, a free negro, the father of several children, of a stout muscular frame, and temperate habits, 36 years of age, came under my care on Saturday, February 13th., 1841, on account of an aneurism of the right axillary artery. He was an industrious, hard-working man, a brick-maker by occupation, and had always enjoyed excellent health until within the last few months. On examination, I discovered a circumscribed, pulsating tumor underneath the pectoral mus-

cle, extending from the clavicle, which it had thrown considerably upwards, into the axilla, on the one hand, and down towards the cartilage of the fourth rib, on the other. It was of an irregular, conical shape, and about the size of a very large fist, measuring fully four inches at its base in one direction by three and a half in the other. In its feel it was very tense, as well as inelastic, and the pulsation was so distinct that it could be seen at the distance of some feet from the patient. Pressure, however firmly applied, produced no sensible effect upon it; and the blood rushed into it with a loud whizzing noise, or "bruit de soufflet." Owing to the elevation of the clavicle it was impossible to compress the subclavian artery so as to arrest the pulsation in the swelling, or even diminish the flow of blood through it. The whole limb, from the top of the shoulder to the extremities of the fingers, was benumbed, painful, and almost deprived of the power of motion; the swelling, however, was slight, and not at all œdematous in its character: the temperature was also good. Severe suffering was likewise experienced in the site of the tumor and in the lower part of the neck, from the compression, doubtless, of the axillary plexus of nerves. The pectoral muscle was stretched to the greatest extent; and the patient constantly inclined his head towards the affected side, keeping the elbow nearly at a right angle, and supporting it carefully with the opposite hand, to prevent tension of the swelling. The pulse at the wrist was nearly as distinct as in the other limb, but it now and then intermitted. For the last four weeks the pain was almost incessant; it was particularly severe at the chest and shoulder, and had become so agonizing, of late, as to deprive him, in great measure, of sleep, or even prevent him from lying down. His appetite was also much impaired, and his countenance was expressive of the deepest distress.

On questioning him as to the origin of his disease, he stated that last Christmas a year ago while firing a yager, the but-end struck against the right collar bone, near its middle, followed instantly by great numbness of the whole limb, which continued upwards of an hour, when it gradually subsided. Early in April following, the arm began to swell from the wrist to the shoulder, attended with slight pain and impaired sensibility, which were supposed to be of a rheumatic character. The tumor was first perceived in June; it was situated just below the clavicle, pulsated very faintly, and did not exceed the volume of a hazel-nut. From this period on it gradually enlarged, having acquired by the following Christmas the dimensions of an apricot or moderate-sized plum. It had also become the seat of considerable pain; and there was a manifest increase of numbness in the affected side. In January the aneurism was observed to grow with great rapidity, the arm became gradually useless, and, in short, there was a decided aggravation of all the symptoms; the sufferings of the patient, when I first saw him at the date above specified, being of the most excruciating nature.

As there was considerable vascular excitement with a coated condition of the tongue and constipation of the bowels, he was requested to be bled immediately to the amount of about twenty ounces, to take a liberal dose of senna and salts, to keep perfectly quiet, and to use none but the lightest kind of food. On Wednesday the 17th of February he called again at my room, when it was found that the tumor had much increased in size, being nearly or quite one-third larger than on the previous Saturday. The pain was also much greater; his appetite was extinct; and for the last three or four nights he had scarcely slept a wink. Under these circumstances, con-

vinced that no time was to be lost, I immediately requested a consultation with my colleagues, Professors Drake, Cobb, and Miller. Dr. Bayless, our Demonstrator of Anatomy, Dr. T. L. Caldwell, Dr. Donne, and several other physicians were likewise present, and kindly afforded their views concerning the case. After carefully deliberating upon the subject, these gentlemen unanimously concurred with me in the opinion that the only chance for the patient's life was to tie the subclavian artery; and the operation was accordingly appointed for twelve o'clock the next day.

On Thursday, February 18th., in the presence of my colleagues, a large number of physicians, and of the medical class, I proceeded to the operation. The patient was placed upon a narrow table of moderate height, the head and chest were properly elevated with pillows, and the face turned a little towards the sound side, while an assistant pulled at the wrist, so as to depress as much as possible the affected shoulder. The integuments over the clavicle being next stretched upon the chest, I made my first incision along the centre of that bone, beginning near the sternal origin of the mastoid muscle and passing out towards the acromion process of the scapula for about three inches and a half; thus dividing at one stroke the common integuments and the fibres of the platysma-myoid. The parts being now allowed to retract, left the lower margin of the cut parallel, and on a level with the superior border of the clavicle. A second incision, about two inches in length, was carried along the posterior edge of the mastoid muscle, at a right angle with the preceding. The triangular flap thus formed was then disssected up and held out of the way, care being taken not to interfere with the external jugular vein, or any of the smaller arteries of the neck. Having advanced thus far, the cervical aponeurosis was de-

tached from the clavicle by cautious strokes of the handle of the scalpel, which laid bare the brachial plexus of nerves and the omo-hyoid muscle. At this stage of the operation a small vein, a branch of the subclavian, was divided, and although it bled very little, it was immediately secured with a temporary ligature. Taking the omo-hyoid for my guide, I divided the loose cellular substance in the triangular space bounded above by the muscle just mentioned, by the clavicle below, and by the anterior scalene muscle internally, and thus approached the artery as it passed over the first rib. The vessel here lay at some distance from the inferior branch of the brachial plexus of nerves, rather deeply behind the collar-bone; and with a common aneurismal needle, armed with a double ligature of saddler's silk, no difficulty was experienced in securing it, the instrument being passed from before backwards and from below upwards. It was then drawn very firmly with the fingers and tied with a double knot within a few lines of the anterior scalene muscle: as soon as this was accomplished all pulsation in the sac, as well as at the wrist, ceased. One end of the ligature being cut off, the other was left protruding at the inner angle of the wound, the edges of which were closed by three sutures and adhesive straps. Not half an ounce of blood was lost during the operation, which lasted twenty minutes.

The man was put to bed, and the limb, laid in an easy position, wrapped in cotton wadding. In less than an hour, the temperature, which had been considerably depressed, was thoroughly restored; the pain and numbness had greatly abated; and the patient expressed himself more comfortable than he had been for a month.

S o'clock, P. M.—He is quite comfortable, except a slight degree of soreness along the wound. His breathing is na-

tural, and the pulse about 80. He was requested to lie perfectly quiet, to keep the limb well covered, and to drink toast water.

19. 9 o'clock, A. M.—Had a pretty good night, having enjoyed several hours of sound and refreshing sleep. Tongue moist and tolerably clean: pulse 80: heat of the skin natural: no unusual thirst: temperature of the limb equal to that of the opposite side: *tumor quite solid.* Ordered thin gruel, as he expressed a wish to have something to eat.

8 o'clock, P. M.—Progresses very well; there being no fever, or any pain or tenderness in the wound: bowels have not been opened since the operation: is requested to take an ounce of sulphate of magnesia at 10 o'clock.

20. 9 o'clock, A. M.—Passed a good night: pulse soft, regular, and about 78 a minute: tongue moist and pretty clean: is free from pain, except at the back part of the shoulder and arm, where there is some degree of uneasiness: bowels relieved by the salts: numbness of the limb rapidly subsiding.

7 o'clock, P. M.—Has had another alvine evacuation: the wound exhibits a good appearance; and the patient is, in all respects, doing well.

21. 10 o'clock, A. M.—Removed the dressings, and cut away two of the sutures: the wound has united pretty well, except at each angle, where there is a discharge of healthy looking pus: parts beneath have a solid feel: tumor is considerably diminished in volume: patient rests well, and is entirely comfortable.

From this date every thing went on favorably. The tumor steadily decreased in size, the numbness of the limb gradually subsided, the hand and fingers could be more easily moved, the temperature was equal to that of the opposite

arm, the patient had a good appetite, and, in short, every function appeared to be well executed. He was still kept on the lightest kind of food, and was forbidden even to raise himself up in bed: no medicine was administered, excepting occasionally a dose of oil or salts, to regulate the bowels. The other stitch was removed in a few days, and the wound rapidly cicatrized, excepting at the upper angle, and at the point where the ligature of the artery protruded.

The ligature came away on the morning of the fourteenth day from the operation, without a drop of blood. The patient at the time was in good health and spirits, and expressed a wish to return to his family, upwards of one hundred miles down the Ohio. The tumor had diminished fully one-half in volume, the pectoral muscle, beneath which it was situated, being quite flaccid and extensible. The pulse at the wrist was still absent, and there was likewise some numbness at the top of the shoulder and the extremities of the fingers, but the movements of the limb daily improved, and the patient was perfectly convalescent. To guard against accident, he was requested to live low, and keep his bed for a few days longer.

On Sunday the 7th of March, being obliged to leave town, I placed the patient in the care of my friend Dr. T. L. Caldwell, to whom, as well as to Dr. S. B. Richardson, who was subsequently called in, I am greatly indebted both for his unwearied attention and skilful treatment, and for an account of the daily progress of the case until my return. From the diary furnished by the former gentleman I make the following extracts.

Nothing worthy of notice occurred until Saturday night the 13th of March, when he began to feel somewhat unwell; he had walked about the room occasionally, and been out sev-

eral times in the yard. Being no better next day, he took a dose of castor-oil of his own accord, and on Monday morning an ounce of salts, both of which had operated well, and he expressed himself much relieved. He had experienced no pain, and attributed his indisposition to having taken cold from throwing off the bed-clothes on Sunday night. Dr. Caldwell, who saw him towards noon on Monday, found his pulse somewhat accelerated, with a slight degree of tenderness in the apex of the tumor, the volume of which had not perceptibly diminished since my departure. The wound was perfectly cicatrized, excepting at two points not exceeding a quarter of an inch in length, and from which there was a very small discharge of healthy matter. The pulse at the wrist was still imperceptible.

16. 5 o'clock, A. M.—About 12 o'clock last night the patient was suddenly seized with intense pain in the chest, which was particularly severe at the base of the right lung, from which it extended over towards the sternum, on the one hand, and up towards the axilla, on the other. Respiration short, hurried, laborious, and about 56 a minute: pulse 140, quick and tense: tongue moist and covered with a white coat: aneurismal tumor had suddenly disappeared last night at the time of the attack. Dr. Richardson having reached the patient a short time before Dr. Caldwell, they adopted the following treatment: bleeding at the left arm to about sixteen ounces, and the subjoined prescription, which was ordered to be repeated every two hours:

℞ Subm. Hydrarg. gr. iv.
Nitr. Potassæ gr. iii.
Antim. Tartariz. gr. ¼. M.

In addition to this, a solution of antimony, in the proportion of one grain to the ounce of water, was ordered to be

given, in teaspoonful doses, at the alternate hour, to keep up slight nausea. The bleeding produced considerable relief of the pain, with a diminution of the tenseness and frequency of the pulse.

3 o'clock, P. M.—The pain, though somewhat abated, still persisting, he was cupped to six ounces at the lower part of the chest with a good deal of relief: had a small alvine dejection in the forenoon: suspend the mercurial powders, and continue the antimonial mixture.

6 o'clock, P. M.—Bronchial respiration throughout the right lung, with dulness on percussion over the lower ribs: the blood drawn this morning sizy and cupped. Ordered a large blister to the side, extending from the base of the chest to a short distance above the nipple: continue the antimony every hour.

17. 8 o'clock, A. M.—Blister has drawn well: there is some abatement of pain, the respiration is less frequent, and the pulse is also somewhat better: continue the antimonial mixture steadily, but give it in larger doses to produce nausea.

6 o'clock, P. M.—There is more vascular excitement: no motion from bowels since yesterday: twelve ounces of blood were taken from the arm, the pulse giving way under it: persevere with the previous medicine, and administer half an ounce of castor-oil, repeating it every three hours, if necessary.

18. 8 o'clock, A. M.—Blood drawn last evening buffed: bowels not yet moved: the patient experiences a sensation near the superior part of the chest as if a fluid was passing from the pleuritic cavity into that of the aneurismal tumor, and on carefully auscultating the spot, Dr. Caldwell could distinctly hear a plashing sound at every inspiration, the noise

resembling that produced by shaking water in a closed vessel: the respiration is still bronchial, though not so hurried and painful, and the dulness on percussion is perceived over a larger extent of surface than previously: the breathing is likewise of a bronchial character in the left lung: ordered one ounce of sulphate of magnesia, another blister to the upper part of the chest, and a continuance of the antimony.

6 o'clock, P. M.—Medicine has operated two or three times on the bowels: blister has drawn well: tongue coated and rather dry: *no pain in the chest:* breathing slightly improved.

19. 8 o'clock, A. M.—Had a tolerably good night: respiration still further improved: tongue dry throughout: pulse 140: continue the antimony.

2 o'clock, P. M.—Having returned to the city, I visited Daniel with Dr. Caldwell, Dr. Richardson, and Prof. Miller: pulse small and 140: breathing short, laborious, and 38 in a minute: extremities cold: surface bedewed with clammy perspiration; tongue dry and covered with a brownish-white coat: bronchial respiration in left lung, and almost complete absence of sound in the right: ordered

℞. Carb. Ammoniæ ʒ ii.
Pulv. G. Acaciæ ʒ i.
Mist. Camph. ℥ vi. M.

Give a large table spoonful every hour, and drink milk punch freely.

9 o'clock, P. M.—Condition unchanged: continue as before.

20. 9 o'clock, A. M.—Appears to be somewhat better, the pulse having more volume and less frequency: dozed some during the night: has had five or six alvine evacuations since last evening: is very feeble, but still sensible: continue with the ammonia and milk punch, and take ten drops of laudanum every two hours until the diarrhœa is checked.

2 o'clock, P. M.—Continues much the same, excepting that he is sensibly weaker. Towards evening the mind began to wander, deglutition became difficult, the pulse ceased in the left wrist, and about nine o'clock in the evening he expired apparently without pain; having survived the operation a little upwards of thirty days.

It is worthy of remark that the limb of the affected side retained its temperature fully up to the last moment, although the pulse at the wrist was at no time perceptible. It should also be observed that there was scarcely any cough, or expectoration, during the whole of the period which intervened between the rupture of the aneurismal sac and the patient's death.

Autopsy.—At my particular request the body was inspected, thirty-six hours after death, by Dr. T. L. Caldwell, Dr. Richardson, and Dr. Bayless, in the presence of a large number of the most respectable practitioners of the city, and several medical students. The preceding evening a cold injection of lead had been thrown into the innominata with such force as to pass into the brain and return by the left carotid and vertebral, at the same time filling pretty completely the arteries of the neck, the shoulder, and superior extremity of the affected side.

The body was somewhat emaciated; the wound made during the operation completely cicatrized; and the pectoral muscles considerably wasted, but in other respects unchanged. The subclavian artery terminated abruptly at the outer margin of the scalene muscle, where the ligature had been applied, *its caliber being closed by a mass of solid fibrin, about one-third of an inch in length, which adhered firmly to the lining membrane, and thus afforded an effectual barrier to the passage of the blood.* Between this and the thyroid axis the

vessel was occupied by a dark coagulum of blood, which, as it was unadherent, was probably formed only a short time before death. Beyond the seat of the ligature the artery had a rough, ragged appearance, and was sufficiently pervious to admit of the ready passage of a small probe into the aneurismal sac. Superiorly the tumor was overlapped by the brachial plexus of nerves, while in front, at its lower part, was the subclavian vein, which, besides being thrown out of its natural course, was considerably diminished in size. No pus was any where discoverable, the parts immediately involved in the operation being intimately consolidated by plastic lymph. The aneurismal tumor, placed immediately below the clavicle, was of a conical form, and about the volume of a moderate-sized orange, being two inches and a quarter in diameter at its base. Its walls varied in thickness at different points from half a line to the eighth of an inch, and its interior communicated by means of oval aperture, one inch and three quarters in length by an inch and a half in width, with the pleuritic cavity: it was situated between the first and second ribs, nearly equi-distant between the sternum and the spine, and was the result obviously of ulcerative absorption induced by the pressure of the tumor. Both ribs were denuded of their periosteum immediately around the opening, and the serous membrane had a shreddy, ragged aspect. The aneurismal sac contained a few reddish clots arranged in a laminated manner, and closely adherent to its inner surface, especially at the part corresponding with the apex of the tumor.

The right thoracic cavity contained nearly three quarts of bloody looking serum, intermixed with flakes of lymph and laminated clots, the latter of which were of a reddish-brown color, and had evidently been lodged originally in the aneurismal sac. The pleura exhibited every where marks of high

inflammation, and the right lung was greatly reduced in volume, from the compression of the effused fluid. The left lung was considerably engorged, and at one or two points almost hepatized. The heart and pericardium were sound. The abdominal viscera presented nothing unusual. None of the arteries appeared to have been affected by disease.

The vessels which, by their communication with the subclavian artery above the ligature, and the axillary trunk below the tumor, were mainly instrumental in keeping up the circulation of the limb and shoulder, were the supra and infra scapular, together with the short thoracic. The former of these branches arose on the tracheal side of the scalene muscle, and passing over its anterior surface, about three quarters of an inch above the clavicle, soon separated into three twigs, one of which ran towards the root of the coracoid process, the other two towards the posterior part of the scapula. The truuk of the vessel did not appear to be particularly enlarged, but its terminal divisions were nearly twice the ordinary volume. The infra-scapular artery, which arose from, and consequently opened into, the lower part of the sac, was nearly as capacious as the axillary, or parent trunk. It soon divided into two large branches, one of which formed the long thoracic artery, while the other was destributed to the subscapular muscle. The short thoracic vessels presented nothing worthy of note.

In reflecting upon the manner in which this case terminated, the question naturally arises, did the ulcerative absorption which gave rise to the opening above referred to, and which finally led to the escape of a portion of the contents of the aneurismal sac, commence prior to the deligation of the subclavian artery on the 18th of February, or not until sometime subsequently? For my own part, I am disposed to believe

that it was set up fairly before the operation was performed; a view of the case which is fully borne out, I think, by several circumstances, such especially as the extraordinary bulk of the tumor, and the violent pulsation that was constantly going on in its interior. Under the influence of these two causes, ulcerative absorption must have commenced, in all probability, several months—certainly six or seven weeks—before the occurrence of the perforation which ultimately destroyed the patient. As soon as the operation was over all pulsation in the tumor ceased; its contents became speedily solidified; and its volume progressively diminished, so that for upwards of three weeks there was every reason to believe the patient would rapidly recover. Indeed, no case could have presented more flattering prospects. After the artery was tied the pressure occasioned by the swelling must have been comparatively slight, as was evinced by the fact that the pain and numbness, which before had been constant and excessive, almost immediately subsided. Hence it follows that ulcerative absorption would be much more likely to have been induced before than after the operation. The denuded condition of the ribs, the ragged state of the neighboring pleura, and the absence of purulent matter in the sac and in the wound, the latter of which was perfectly healed when the man died, all concur, moreover, to induce the belief that the perforating process had been going on for sometime prior to the performance of the operation.

Another question of no little interest in reference to the case before us, may be asked here, namely, what would have been the probable effect of opening the aneurismal sac and clearing it of coagulated blood, soon after the artery was tied? Could the event which occurred have been foreseen, such a procedure, I conceive, would not only have been warrantable,

but highly proper; but under the circumstances it would not have been right, certainly not in accordance with the general experience of the profession on this point, to attempt it. The practice, once so much in vogue, of laying open the sac must, to say the least of it, be a very dangerous one; that it was almost universally so previously to the time of John Hunter is too well known to require any comment on this occasion, and that it would be less so at the present day, even with our improved methods of operating, admits, I presume, of much doubt.

Be this as it may, the case, considered in relation to the manner in which it terminated, may be regarded as altogether unique. The only instance, so far as my information extends, which is at all similar to it is one narrated by Mr. Guthrie, in his work on the diseases and injuries of the arteries. As it is highly important both in a pathological and practical point of view, no apology need be offered for introducing a brief outline of it in this place.

A stout, middle-sized man, 53 years of age, became a patient in one of the London hospitals, on account of an aneurismal swelling immediately below the right clavicle, which was first noticed in November, soon after lifting a heavy weight. It gradually increased in size until the following August, when, unwilling to submit to an operation, he went into the country. In December he returned in great suffering, and requested the assistance of Mr. Guthrie. He now experienced continued pain and numbness in the shoulder, chest, and arm of the affected side, with a teazing cough and purulent expectoration; the tumor, which pulsated strongly and with a peculiar thrill, was of the volume of a forty-eight pound shot; and the clavicle was pushed high up into the neck. In a few days after this the patient began to spit blood.

which gradually increased in quantity until his death, which happened in three weeks from the time of his return to London. On opening the body it was found that the aneurism had forced its way into the right thoracic cavity by the removal of a part of the first five ribs, had contracted adhesions to the superior lobe of the lung, and had finally opened into it, so that the gradual discharge of blood destroyed the patient.

II.—*Cases of Axillary Aneurism for which the Subclavian Artery was Tied by other Surgeons.*

I shall now proceed to present an account of some of the cases in which this operation has been performed by other surgeons. A summary is of course all that can be expected, my design being merely to point out the manner in which these attempts have terminated, and to exhibit, as far as this can be done from the imperfect data before me, some of the most important facts in reference to the history of axillary aneurism. After ransacking all the surgical works and medical periodicals within my reach, and these are not few in number, twenty-seven cases are all I can find, and the greater part of these, unfortunately, are devoid of the proper details.

Case 1.—The first case in which an attempt to tie the subclavian artery, by cutting above the clavicle, was accomplished, is that of Mr. Ramsden, of London.* John Townley, a tailor, aged thirty-two, of very intemperate habits, and peculiarly unhealthy aspect, was admitted into St. Bartholomew's Hospital, Tuesday, November 2, 1809, on account of aneurism in the right axilla. The most prominent part of the tumor was about half as big as a large orange, and there was

*Ramsden's Practical Observations on Surgery, p. 276.

also much distension underneath the pectoral muscle, so that it was impossible to bring the elbow near the side of the body. The limb, although it retained its temperature, soon became œdematous, and the pulsation of the radial artery, already very faint, at length entirely ceased. On the evening of the twelfth day a dark spot appeared on the centre of the tumor, surrounded by inflammation, which threatened more extensive destruction of the skin. A farther postponement of the operation being deemed inadmissible, Mr. Ramsden performed it the next day, tying the artery on the outside of the scalene muscle. The shoulder being considerably elevated by the tumor, great difficulty was experienced in passing the ligature; this, however, was finally overcome by a probe of ductile metal and a pair of small forceps. As soon as the artery was tied, the pulsation in the swelling ceased; the limb afterwards fully retained its temperature; and the tumor had already somewhat diminished in volume, when about five days after the operation the patient expired. On examination, it was ascertained that the subclavian artery, where the ligature was applied, was so nearly separated that it was held together only by a few shreds of dead matter. Each extremity of the vessel appeared to be completely consolidated and impervious, leaving no doubt of its being fully competent to resist the impetus of the blood from the heart. The aneurismal sac contained about two pints of blood, the greater part of it in a fluid state; the heart and large vessels were perfectly sound, even the subclavian, excepting at the side of the ligature; and the collateral vessels did not seem to have acquired any increase of capacity beyond what is natural to them.

Case 2.—In the year 1811, the subclavian artery was tied in the London Hospital, in a case of axillary aneurism, by Sir William Blizard. The patient, who was old and debilitated,

died on the fourth day, though strong hopes were at first entertained of recovery.*

Case 3.—A clergyman, 48 years of age, of a stout athletic frame, and who had always enjoyed the most robust health, was affected with axillary aneurism, in consequence of a fall from his horse in December, 1812. In July following the tumor was fully as large as a goose egg: on the sixteenth of that month Dr. Colles, of Dublin, secured the right subclavian artery with two ligatures on the acromial side of the scalene muscle. The time occupied by the operation is not stated. Death occurred on the fourth day from inflammation of the chest and limb.†

Case 4.—In 1815 Mr. Thomas Blizard secured the subclavian artery in the London Hospital. The case was one of aneurism in the left axilla; the ligature was applied at the usual point "with great facility:" and the patient died on the evening of the eighth day, previously to which event the ring and middle fingers turned black. On dissection the pericardium exhibited the effects of high inflammation; the heart, of a deep red color on its posterior surface, was covered with flakes of lymph; the lining membrane of the aorta, right carotid and left subclavian was of a scarlet complexion, and the boundaries of the aneurismal tumor were in a state of sphacelation.‡

Case 5.—This was the first case in which complete success attended the deligation of the subclavian artery, immediately after its exit from between the scalene muscles. The patient was a gentleman, with an aneurism in the left axilla. The tumor was of large size, and had encroached so much upon the clavicle as to throw it considerably above its natural level.

*Hodgson on the Diseases of the Arteries, &c.
†Edinb. Med. and Surg. Journal, vol. 2, p. 14.
‡Hodgson, op. cit. p. 602.

The ligature was passed under the artery with great facility, and immediately on tying it all pulsation in the brachial and radial arteries ceased. In the afternoon the temperature of the limb was observed to be rather higher than that of the other arm. The operation was performed by the late Professor Post, of New York, on the 8th of September, 1817. On the 17th the aneurismal tumor burst, followed by a discharge of about three ounces of dark grumous blood. On the 26th the ligature was detached from the subclavian artery; and before the middle of October the wound was perfectly cicatrized.*

Case 6.—On the 7th of March, 1819, Baron Dupuytren, surgeon to the Hotel-Dieu of Paris, tied the subclavian on the left side, just as it emerges from behind the scalene muscle, in a case of false aneurism of the axillary artery. The patient was of an excellent and robust constitution, thirty-seven years of age. Having been a soldier, he received, seven years ago, in a charge of cavalry, a thrust from a sword which penetrated the axillary artery. The tumor was about the size of a child's head at the time of the operation, which lasted one hour and a quarter. About the fifteenth day the ligature came away; and on the 27th of March the wound was nearly healed. The patient made a perfect recovery.†

Case 7.—On the 30th of March, 1819, Dupuytren performed his second operation for axillary aneurism. The patient, formerly a soldier, forty years of age, and laboring under constitutional syphilis, received a wound from a flat-bladed lance in 1815. The tumor remained small for a considerable period, and then suddenly attained a great volume, extending itself under the pectoral muscle, and elevating the clavicle.

*Cooper's Surgical Dictionary.
†Edinb. Med. and Surg. Journal: vol. 15, p. 476.

The ligature was applied on the acromial margin of the scalene muscle, after one hour and forty-eight minutes; and the case terminated fatally on the ninth day, the swelling having been invaded by gangrene, and the patient having experienced several severe attacks of hemorrhage from the wound.*

Case 8.—The next case is that of Robert Liston, Esq., of Edinburgh, who tied the subclavian artery on the third of April, 1820. This was the first successful operation of the kind in Scotland. The patient, Alexander Gibson, a coachman, aged 35 years, referred the origin of his disease to a fall five months ago in which he pitched on the left shoulder. Latterly the swelling increased with great rapidity, and seemed to extend above the clavicle, which it had very considerably displaced upwards. During the operation, which lasted altogether about half an hour, the anterior scalene muscle was divided. The ligature separated on the twelfth day, and the wound was completely cicatrized by the 8th of May, the tumor having in the meanwhile greatly diminished in size.†

Case 9.—John Robertson, a porter, aged 47, was admitted into the Royal Infirmary of Edinburgh, on the 7th August, 1823, for an aneurism of the left side, extending along the lower margin of the clavicle to the axilla. The tumor arose without any assignable cause, and when first noticed, about three weeks before, was scarcely larger than a bean. On the 23rd, Dr. Wishart secured the subclavian artery external to the scalene muscle, the operation occupying only "a short time." On the sixteenth day after the ligature was found lying loose in the wound; and a rapid recovery followed.‡

Case 10.—In a patient upwards of sixty years of age, in St. Thomas' Hospital, Mr. Travers tied the subclavian artery,

*Edinb. Med. and Surg. Journal, vol. xvi, p. 199.
†Op. cit. vol. xvi, p. 348.
‡Op. cit. vol. xxi, p. 15.

January 17th, 1823, for axillary aneurism. The great elevation of the clavicle rendered the operation very difficult, independently of the profuse hemorrhage. Altogether it occupied upwards of two hours. The patient died on the third day.*

Case 11.—George Vaughan, aged 36, a man of robust frame, an extra-tide waiter by occupation, lacerated his axillary artery in July, 1823, while making a sudden exertion with his arm. An aneurismal tumor rapidly formed, which by the end of August was about four inches in diameter, distinctly circumscribed, and extending from the lower edge of the clavicle to the lower border of the pectoral muscle. On the 20th of September, Charles Aston Key, Esq. of London, tied the right subclavian on the acromial side of the scalene muscle, the operation lasting twenty minutes. The ligature was detached on the twelfth day, and the patient speedily recovered. This appears to be the first case in which this vessel was secured with success in the London hospitals.†

Case 12.—Thomas Overall, brass-founder, aged 33, was admitted into St. Thomas' Hospital, August 1st, 1825, under the care of Mr. Green, for aneurism of the right axillary artery. The tumor had existed upwards of five months, and was about the size of a large orange. His shoulder had been dislocated sometime previously, and to that accident he attributed his present disease. "A long time elapsed in coming down to the artery," which was finally secured at the usual situation. Every thing went on well until the thirteenth day, when secondary hemorrhage set in, which considerably weakened the patient, and rendered the success of the operation for a while doubtful. On the eighteenth day the wound was nearly healed, but the ligature had not yet separated from the artery.‡

*London Medico-Chir. Mag.—Philad. Jour. Med., vol. vii, p. 183.
†Trans. of the Royal Med. and Chirurg. Society, vol. xiii.
‡Lancet, vol. viii, pp. 189–283.

Case 13.—John McIntyre, aged 43, presented himself to Mr. Liston, of Edinburgh, September, 1826, with a very large aneurismal tumor in the right axilla, equalling in volume a common-sized foot-ball. It passed upwards underneath the collar-bone, which it had raised considerably, and downwards below the border of the axilla, pressing in the ribs and flattening the chest. About Christmas, 1825, he fell on the ice with his arm stretched out, and to this accident he ascribed his disease. On the 12th September Mr. Liston tied the subclavian artery at two points, the last close to the outer edge of the scalene muscle; and, although every thing promised well for a while, yet death occurred on the fourteenth day, preceded by slight hemorrhage from the wound. On dissection the vessel was found to be considerably diseased; the wound was filled with coagula; and at neither of the points of deligation was there much appearance of reparation.*

Case 14.—Thomas Wharnby, aged 36, was admitted into the Manchester Infirmary, April 16, 1827, in consequence of an aneurismal tumor in the right axilla as large as a moderate-sized orange. With the exception of this disease, which was first noticed about twelve months ago, he was apparently healthy. On the 17th of June Robert Thorpe, Esq. tied the subclavian artery at the place usually selected for that purpose, the whole operation occupying fifteen minutes. The ligature separated on the 4th of July, and the patient got entirely well.†

Case 15.—William Weston, wood-hawker, aged 38, a stout and very muscular man, was admitted into Guy's Hospital in November, 1827. The aneurism, which made its appearance

*Edinb. Med. and Surg. Journal, vol. xvii, p. 4.
†Medico-Chir. Review, January, 1828.

without any assignable cause about nine weeks previously, occupied the right axilla, and was about the size of an egg. The operation of tying the subclavian artery was performed, in the usual manner, by Bransby B. Cooper, Esq. on the fourth of December, and the patient had a speedy recovery.*

Case 16.—Professor Gibson, of the University of Pennsylvania, tied the subclavian artery on the 17th of March, 1828, for axillary aneurism in John Langton, a muscular athletic man, a laborer by occupation, aged thirty-five. The disease was produced two days previously in an attempt to reduce an old luxation of the left shoulder-joint. The vessel was secured close to the outer margin of the scalene muscle; and the patient died on the 23d of March, the eighth day after the operation. The left hand and fore-arm were in a state of incipient gangrene, and no coagulum or trace of lymph could be observed above the ligature.†

Case 17.—Hermenegildo Gonzales, a poor farmer, the father of three children, of small stature and spare habit, sixty-one years old, had always enjoyed good health until October 1827, when he began to feel pain along the course of the scalene muscles of the right side, which he supposed might have been occasioned by violent horse-back exercise. This was soon followed by the developement of a tumor in the axilla, which by the early part of the following April was of a hemispherical form and measured three inches in diameter. The subclavian artery was tied by Dr. Edward W. Wells, of Maracaybo, on the 12th of April, on the acromial side of the scalene muscle; the ligature came away on the third of June, by which time the tumor had decreased to the size of a walnut; the wound was perfectly cicatrized by the fourteenth of that

*London Medical and Physical Journal, February, 1828.
†American Journal of the Medical Sciences, vol. ii, p 136.

month; and the patient lived nearly three years after the operation, dying finally of ulceration of the bladder.*

Case 18.—A stout muscular individual, a fisherman by occupation, aged forty-six, was admitted into the Parochial Infirmary at Davenport, England, June 10th, 1830, with a large, tense, pulsating tumor on the right side, extending from the cartilage of the fifth rib to the axilla over the point of the shoulder. It made its appearance about thirteen weeks previously, soon after an attack of rheumatism of the right arm; in a month it was of the size of a walnut, and in a fortnight thereafter it attained its greatest volume. On the 23d of June, Mr. Crossing tied the subclavian near its exit from between the scalene muscles, the whole operation lasting twenty-five minutes. The ligature came away on the *eighty-fifth* day, and in December following the tumor had nearly disappeared.†

Case 19.—William Hines, of Smithville, Virginia, laborer, twenty-eight years of age, became a patient of Professor Mott of New York, August 24th, 1830, for axillary aneurism of the right side. The tumor was about the volume of a goose-egg, and made its appearance seven weeks ago, soon after a violent strain produced by carrying a canoe on hand-bars across the arms. His general health was good. The artery was tied a little external to the scalene muscle, and at the expiration of twenty-seven days the wound was perfectly healed; the aneurismal tumor being very hard and much diminished in volume. The operation lasted fifteen minutes.‡

Case 20.—The subject of this case was a man sixty-three years of age, who attributed his disease to a hurt received

*Amer. Jour. Med. Sciences, vol. iii p. 28. See also vol. xiii, p. 406.
†Medico Chirurg. Review, vol. xv, p. 507.
‡American Jour. Med. Sciences, vol vii, p. 309.

sometime before. The tumor, which resembled the section of an oblate spheroid, extended from the clavicle into the axilla of the right side, being about the size of a large orange. The operation of tying the subclavian artery was performed on the 17th of December, 1830, by W. Bland, Esq. of Australia; and the ligature fell off on the 29th of January, leaving the wound entirely healed.*

Case 21.—In 1830 William H. Porter, Esq., of Dublin, tied the left subclavian successfully at the Meath Hospital, in a man forty years of age. The aneurismal tumor was situated at the part corresponding to the division between the great pectoral and deltoid muscles, had a firm pulsating feel, and was nearly of the volume of a goose-egg, having slightly displaced the clavicle. The ligature was applied at the usual point, and for about a month every thing progressed favorably. At the end of this time the tumor, which had diminished in size, began to increase and become painful, and, notwithstanding the diligent employment of antiphlogistic measures, went on to suppuration. An incision being made into it, it discharged about a pint of fœtid purulent matter, mixed with large dark clots of blood. Under the use of pressure it soon healed, and the man eventually recovered.†

Case 22.—In this case the artery was secured by Charles Mayo, Esq. of Winchester, England, March 26, 1831. The patient, W. Mathews, was forty-nine years of age, and the tumor, which was of about six weeks' standing, occupied the left claviculo-axillary region. The ligation was completed in a little more than twenty minutes. On the 10th of May the

*American Jour. Med. Sciences, vol. ix, p. 527. See London Med. and Surg. Journal, Oct. 1831.

†Dublin Hospital Reports, vol. v, 1830. North American Med. and Surg. Journal, vol. xii, p. 106.

wound was perfectly healed, and the tumor had disappeared.* Mr. Mayo operated, but unsuccessfully, on a similar case ten years before, the particulars of which I have not been able to obtain.

Case 23.—The next case of axillary aneurism in which the subclavian artery was tied, is that of William Ferguson, Esq. of Edinburgh. The patient, Mark Robson, a waiter, aged sixty, of intemperate habits, could assign no cause for the original appearance of the disease, but thought it might have resulted from some injury on the arm during one of his drunken fits. The tumor, which was scarcely perceptible for many months, rapidly increased within the last six weeks, and was now about the size of a large fist. The operation was performed in the usual manner on the 12th of May, 1831; the ligature separated on the 13th of June; and a rapid recovery followed.†

Case 24.—Robert Blackwood, a weaver, aged sixty-five, was admitted into the Royal Infirmary of Glasgow in June, 1833, on account of a strongly pulsating tumor under the left clavicle, extending towards the lower part of the axilla. It was of an oblong, pyriform shape, measuring fully six inches in one direction by two and a half in the other. The swelling first appeared *above* the clavicle eighteen months ago, and, with the exception of cough and dyspnœa, both of which were aggravated on assuming the horizontal posture, the health of the patient was quite good. Dr. William Auchincloss tied the subclavian artery *within* the outer-third of the anterior scalene muscle, the operation, dressing and all, occupying about forty minutes. Death occurred in sixty-eight hours and a half, from effusion of serum on the surface and into the ventricles of the brain.‡

*Medico-Chir. Review, vol. xv, p. 482.
†Edinb. Med. and Surg. Journal, vol. xxxvi, p. 309.
‡Edinb. Med. and Surg. Journal, vol. xlv, p. 324.

Case 25.—Mrs. Hain, a weaver, of a spare habit of body, aged forty-two, had a pulsating tumor in the left axilla, which, on the 16th of April, 1834, was about the size of a man's fist. She could assign no cause for its origin, and first perceived it about ten years ago, when it was very small, and produced little or no inconvenience, even when engaged at her usual employment. Within the last six months it has increased with considerable rapidity, and eight days ago, when she experienced a sensation as if something had given way, she observed that the swelling had assumed a different shape and was much larger than previously. The local suffering also greatly augmented, and the general health became sensibly impaired. The subclavian artery was tied by Professor Lizars, of Edinburgh, on the 27th of April, on the acromial side of the anterior scalene muscle, in the short space of ten minutes. Scarcely any blood was lost; about sixty hours after the operation the pulsation could be felt in the arteries at the wrist; and the woman rapidly recovered without any untoward occurrence.*

Case 26.—The next case in which the subclavian was tied, and the last which I shall mention on this occasion, is that narrated by Dr. Samuel Hobart, of Cork. The tumor, which was situated immediately under the right clavicle, near its acromial extremity, was of the volume of a large duck-egg, and was first observed about four months previously, without any assignable cause. The patient, John Wright, aged 38, was "a respectable citizen of Cork, and of good bodily habits." The artery was readily secured on the acromial side of the scalene muscle on the 7th of May; the ligature was detached about the sixteenth day; and on the 30th of July the tumor had almost wholly disappeared.†

*Lancet, 1834, vol, ii, p. 717.

†Edinb. Med. and Surg. Journal, vol. xlv, p. 48.

From the preceding abstract it will appear that there was only one female in the twenty-six cases. Axillary aneurism may therefore be regarded as being much more common in men than in women; agreeing, in this respect, with aneurism of the carotid, iliac, femoral, and popliteal arteries, as well as with that of the aorta.

Of these twenty-six patients, seventeen, or nearly two-thirds, were *cured*. Of the remaining nine, two died on the third day; one on the fifth; two on the fourth; two on the eighth; one on the ninth; and one on the fourteenth. The cause of death, as might be expected, was not alike in all the cases. In one—that of Dr. Auchincloss—it evidently resulted from the effusion of serum on the surface and into the cavities of the brain. In Professor Gibson's case, the left hand and fore-arm were in a state of incipient gangrene, and no effort had been made at reparation, although the patient lived until the eighth day. In John McIntyre, on whom Mr. Liston operated in 1826, slight hemorrhage occurred a short time before death, which happened on the fourteenth day; and on dissection it was found that the artery had given way in consequence of ulcerative absorption. In this case, too, scarcely any attempt had been made at restoration. In case vii, death occurred on the ninth day, preceded by several slight attacks of hemorrhage from the wound, and by gangrene of the aneurismal tumor. In the patient operated on by Dr. Colles, violent inflammation was discovered in the chest and limb; and in the case of Mr. Thomas Blizard, there were evidences of severe pericarditis and arteritis, with sphacelation of the aneurismal swelling and of the ring and middle fingers. In the other two cases no mention is made of the cause of death.

In ten of the cases, the disease occurred on the *left side*, in twelve on the right. The *youngest* of the patients was twen-

ty-eight years of age; nine were between thirty and forty; eight between forty and fifty; and five between sixty and seventy; the oldest being sixty-five. In regard to their *occupation*, two were soldiers, one a gentleman, one a tailor, one a clergyman, one a coachman, one a farmer, one a wood-hawker, one a fisherman, one a tide-waiter, one a brass-founder, two weavers, two laborers, and two porters.

The *cause* of the disease is distinctly stated only in ten of the cases. In most it was produced by external violence, as a fall or strain. In the case of Professor Gibson, the tumor was developed soon after a fruitless attempt at reducing an old dislocation of the shoulder-joint; and in the soldiers operated on by Dupuytren the lesion was of a traumatic kind, the axillary artery being perforated by a sharp-pointed instrument. In one of the cases, that of a fisherman, forty-six years of age, the disease was attributed to the effects of rheumatism.

The *duration* of the disease varied from a few days to several years. In the case reported by Dr. Gibson, already alluded to, it was only of two days' standing; while in one of Dupuytren's it had existed for seven years, and for ten years in the one which fell under the observation of Professor Lizars. In this case, No. xiv, the aneurism came on without any assignable cause, and remained small until within six months of the time of the operation. In the other fourteen cases, in which I have been able to determine this point, the duration of the disease, prior to the deligation of the subclavian artery, was as follows:

In	1	- - - -	5 months.
"	1	- - - - -	5 weeks.
"	1	- - - -	2 months.
"	1	- - - - -	8½ months.

In	1	- - - -	12 months.
"	1	- - - - -	10 weeks.
"	1	- - - -	7 months.
"	1	- - - - -	7 weeks.
"	1	- - - -	3 months.
"	1	- - - - -	6 weeks.
"	1	- - - -	18 months
"	1	- - - - -	4 months.
"	1	- - - -	4 years.

With respect to the *volume* of the aneurismal tumor, no definite information can be derived from the above cases, owing to the vague and unsatisfactory manner in which this subject has been treated by the reporters. Of the twenty-one cases in which this point is noticed, the following table may be presented, it being impossible to deduce any general conclusion from them.

In case	1	the tumor was	- -	"large."
" "	3	" "	of the size of a goose-egg.
" "	5	" "	- - -	"large."
" "	6	" "	- -	child's head.
" "	7	" "	- -	"very large."
" "	8	" "	- - -	"large."
" "	10	" "	- -	"large."
" "	11	" "	- four inches in diameter.
" "	12	" "	- - -	very large.
" "	13	" "	- -	foot-ball.
" "	14	" "	- - -	orange.
" "	15	" "	- -	egg.
" "	17	" "	- three inches in diameter.
" "	18	" "	- -	"large."
" "	19	" "	- - -	goose-egg.
" "	20	" "	- -	large orange.

In case 21 the tumor was of the size of a goose-egg.
" " 23 " " - - large fist.
" " 24 " " six inches by two and a half.
" " 25 " " - - - fist.
" " 26 " " - - - duck-egg.

The length of time occupied in *performing the operation* is stated only in eleven cases, in which it varied from ten minutes, the minimum, to upwards of two hours, the maximum; the operator, in the former case, being Professor Lizars of Edinburgh, in the latter, Mr. Travers of London. Baron Dupuytren also consumed one hour and forty-eight minutes in one of his operations. In the remaining eight cases, the deligation of the subclavian occupied, in two, twenty minutes; in two, fifteen minutes; in one, twenty-five minutes; in one, forty minutes; and in two, thirty minutes.

In twelve of the cases the *ligature separated*, in three, on the twelfth day; in one, on the fifteenth; in two, on the sixteenth; in two, on the eighteenth; in one, on the thirty-second: in one, on the forty-third; and in one—that of Mr. Crosssing—on the eighty-fifth.

Of the *symptoms* of this lesion very little need be said in this place, as they are usually so well marked as to render it impossible to mistake them. When arising spontaneously, or without any assignable cause, it may exist for several months without attracting any particular notice, and the same thing occasionally occurs when it results from external violence, as a blow or strain. Generally, however, the tumor rapidly augments in bulk, and produces such a train of phenomena as to lead at once to its detection. Of these, one of the earliest, and at the same time most unpleasant, is the sense of fatigue or uneasiness in the affected part arising from the pressure on the axillary plexus of nerves. This symptom is usually

succeeded in a few weeks, sometimes indeed in a few days, by a feeling of pain, which is always in direct ratio to the size of the aneurism, being comparatively slight when it is small, and more or less intense when large. Nor is the pain confined to the site of the disease; in most cases it radiates from it, as from a centre, in different directions, outwards into the shoulder, downwards along the arm, and upwards into the neck. Pressure, severe coughing, the recumbent posture, and the weight of the limb greatly increase it. It is also apt to be worse at night, and in damp states of the atmosphere. Numbness of the shoulder, chest, and arm, is another symptom which generally manifests itself at an early period of the disease, and is never absent when the tumor has acquired considerable magnitude. It is always very distressing to the patient, is greatly aggravated by pressure on the swelling, and commonly extends to the ends of the fingers. Indeed it is at this point that the sensation in question is often most keenly felt.

The pulsation of the tumor, at first faint and scarcely perceptible, becomes very distinct in the progress of the disease, so that it can be felt not only by the fingers, but seen at a considerable distance, sometimes ten or twelve feet, from the patient. On applying the ear or stethoscope to the tumor, the blood is found to rush into it with more or less violence, producing a peculiar thrill, or whizzing noise, synchronous with the contraction of the left ventricle of the heart. In the early stage of the disease, the swelling is soft and elastic, and may be readily emptied by pressure; by degrees, however, it becomes firm, tense, and, in a great measure, if not entirely, incompressible. In some cases, not in many, especially in those attended with great enlargement, there is considerable diminution of temperature of the affected limb, with

indistinctness of the pulse at the wrist, or even entire absence of it, more or less cough, dyspnœa, and shortness of breath. Occasionally the pulse is fully as strong as in the other arm, but irregular or intermittent, losing several strokes in a minute.

In addition to these symptoms, there is always, when the swelling is large, so much displacement of the clavicle as to render it difficult, if not impossible, to distinguish the pulsation of the subclavian artery, the vessel being deeply buried behind and below the bone. In a few instances the collar-bone has been found to be considerably embedded in the tumor, or partially removed by absorption. Another symptom, which, from its frequent presence, especially in the latter stages of the disease, requires mention here, is the swelling of the affected limb. This varies in degree in different cases, often extends from the shoulder to the ends of the fingers, and is usually of an œdematous character, pitting under pressure, and becoming aggravated by the dependent position of the part. When thus affected, the muscles lose their contractile power, and the motions of the extremity are proportionably impaired, or entirely annihilated. Sometimes, again, owing to the great magnitude of the tumor, the patient is unable to approximate the limb to the side of the chest. Finally, there is another phenomenon, which, as it is almost invariably present in the latter stages of axillary aneurism, I am disposed to regard as pathognomonic. I allude to the peculiar attitude of the patient, arising from the constant inclination of the head towards the affected side, and the manner in which he supports the corresponding arm: the object of both being evidently to prevent the tension which would otherwise be caused in the tumor. Under these circumstances, too, the countenance wears an anxious and dis-

tressed appearance, and, as the system sympathises with the local affection, there is more or less derangement of the general health.

Notwithstanding that the symptoms of this disease are usually well-marked, it has sometimes happened that tumors of this description have been opened by ignorant practitioners under the belief that they were abscesses. For such stupidity no apology can be offered. Still, cases occasionally present themselves, though very rarely, in which it is extremely difficult, at first sight, to distinguish between this and other swellings in the arm-pit or subclavicular region. Enlarged lymphatic ganglions, adipous tumors, or encephaloid growths, for example, if they happen to lie along the course of the axillary artery, might have a pulsation imparted to them, and thus create some doubt in regard to their real character. Under such circumstances, the facility with which the tumor can be elevated or removed from the vessel, the absence of the peculiar whizzing sound, previously alluded to as being generally present in aneurismal disease, the slight pain and numbness in the part and in the corresponding limb, the diminution of the swelling on the application of pressure to the subclavian artery, and, above all, the history of the case, will generally be sufficient to enable the practitioner to arrive at a correct diagnosis.

In this disease the tumor may be *situated* either immediately below the clavicle, or in the axilla, properly so called. In the former case, it may not only elevate the clavicle, but extend up into the neck, beneath the bone, as far as the acromial margin of the scalene muscles. In the latter, it has been known to reach some distance down the arm, so as to compress the brachial artery and nerves, and prevent the approximation of the limb to the side.

Axillary aneurism, like the same disease in other parts of the arterial system, sometimes undergoes a *spontaneous cure.* An instance of this description is mentioned by Professor Cooper, in his Dictionary of Surgery, and another by M. Breschet of Paris, in his translation of Hodgson's work on the diseases of the arteries and veins. Such a mode of termination must, however, be extremely rare, and should be regarded merely as an exception to a general law, in conformity with which the disease in question, if not arrested by surgical means, will sooner or later destroy the patient. This fatal result may be brought about in one of several ways: first, by the rupture of the sac, from external violence, or from the impulse communicated to it by the current of the blood, followed immediately or remotely by exhausting hemorrhage; secondly, by suppuration, or ulcerative absorption, attended by similar consequences; and thirdly, by gangrene of the limb, or even of the aneurismal tumor itself.

Since, then, the common, if not invariable, tendency of axillary aneurism is to terminate fatally, *at what period after the developement of the disease should the operation of tying the subclavian artery be resorted to?* I answer, as early as possible; not a day should be lost after the nature of the lesion has been ascertained, and the patient placed in a condition to undergo it. Nothing surely can be gained by delay; on the contrary, the longer relief is withheld the greater will be the difficulty of securing the vessel, and the less the chance of rescuing the sufferer. From the numerous examples in which the subclavian artery has been tied, for the cure of this affection, it is evident that the anastomosing branches are fully adequate to carry on the circulation in the parts beyond the tumor. To such a degree, indeed, is this the case, that it has been repeatedly observed that there was no diminution of the

temperature of the affected limb even immediately after the operation. From all the information, therefore, which we possess on this subject, it may be safely assumed, as a general proposition, that the subclavian should be secured at the earliest moment possible.

Having, as I trust, satisfactorily established the point as to the propriety of an early operation, the next question that presents itself is, *under what circumstances ought the deligation of the artery be declined?* Indiscriminate operations cannot be too much condemned, as being injurious alike to the patient, the reputation of the surgeon, and the interests of science. Like a prudent general, the surgeon should know when to retreat as well as when to advance. It is difficult to conceive of any thing more laudable than a bold undertaking in a case which must prove fatal without speedy relief. At the same time it would certainly indicate a degree of weakness, if not of downright folly, to attempt an operation where there is not the slightest prospect of a favorable issue. The circumstances in which, according to my judgment, interference would be unjustifiable, relate not merely to the tumor, but also, and that in an especial manner, to the patient himself. Enormous size of the aneurism alone is not a sufficient reason for declining an operation, since several of the examples above analyzed afford abundant proof that it may turn out well, even where every thing is apparently of the most desperate nature. In case vi, in which the aneurism was of the volume of a child's head, the subclavian artery was tied successfully by Dupuytren; and in case viii, where the size of the tumor was scarcely less, the result was equally fortunate. It is only, in short, where the lesion under consideration is combined with a worn-out state of the patient, a diseased condition of the great vessels, or some serious structural derangement of

the thoracic or abdominal viscera, that an operation should be rejected as inadmissible. Under all other circumstances, no matter what may be the volume of the tumor, the duration of the malady, or the causes which have induced it, it will be our duty to afford the patient a chance for his life by cutting off the supply of blood from the aneurismal sac, and directing it into other channels, especially when that chance is the only one of which, in the present state of the science, we can avail ourselves. Even when gangrene has already commenced in the part, the surgeon should not decline the operation, provided there is nothing else to forbid it. The records of the profession afford abundant evidence of the propriety of this advice, not direct, it is true, but analogical. Thus in two cases of inguinal aneurism affected with gangrene, Sir Astley Cooper tied the external iliac artery, and though the tumors burst, no hemorrhage ensued. The coagula were discharged, the sac granulated, and the sores gradually healed.* Where the case is utterly hopeless, some advantage may be derived from strict attention to diet, confinement in the semi-erect position, gentle purgation, the repeated employment of the lancet, the occasional exhibition of an anodyne, and cold applications to the tumor. At all events, such a course would have a tendency, in some degree, to allay the patient's sufferings, and thus smooth his passage to the grave.

In the earlier attempts that were made for the radical cure of axillary aneurism, by tying the subclavian artery immediately external to the scalene muscle, great doubt appears to have been entertained in regard to the competency of the *anastomosing branches* to carry on the circulation in the parts beyond the seat of the disease. These apprehensions, however, were soon dissipated; for it was satisfactorily ascertain-

*Cooper's Surgical Dictionary, p. 102.

ed that in those cases in which the operation terminated unfavorably—and no other result was witnessed until 1817, when the vessel in question was first successfully ligatured by Dr. Post—the failure proceeded from causes entirely unconnected with the nourishment of the limb. The arteries which are more particularly concerned in maintaining the collateral circulation are, the supra-scapular, the transverse cervical, the internal mammary, the long thoracic, and the infra-scapular, the first three being branches of the subclavian, the other two of the axillary. The thoracic artery frequently arises from the aneurismal sac, and is therefore liable to be obliterated for some distance in the progress of the disease. Where the patient survives the operation for several years these vessels acquire a very large caliber, and thus compensate very fully for the loss of the parent trunk. In case xi, that of John Vaughan, who died twelve years after the subclavian was tied by Mr. Key, some of the collateral channels were dilated to three times their natural size, and so tortuous as to bear no slight resemblance to varicose veins.*

I now proceed to make some remarks on the *best method of exposing the subclavian artery*, as it emerges from behind the anterior scalene muscle. By a reference to the different cases on record it will be found that the operation has varied in the hands of different surgeons, some prefering one, others two incisions. Mr. Liston, as appears from his treatise on operative surgery,† is still an advocate for the latter proceeding, having resorted to it, I believe, in all his cases. My distinguished friend Professor Smith, of Baltimore, adopts a similar course, advising that one incision should be made along the border of the clavicle, the other co-incident with the outer

*Guy's Hospital Reports. vol. i, p. 59. 1836.
†Second Edition. p. 177. London, 1838.

border of the mastoid muscle.* Professor Gibson, of Philadelphia, recommends a horizontal incision *above* the collar-bone, commencing near the sterno-clavicular articulation, and terminating at the anterior edge of the trapezius.† My friend Dr. Mott, in one of his operations, that on William Hines, made an *oblique* incision, two inches in length, corresponding to a middle line of the triangular interval formed by the scalene muscle internally, by the clavicle inferiorly, and by the omo-hyoid muscle externally.

That two incisions, as recommended by Mr. Liston and others, are highly proper in some instances, cannot, I think, be doubted; but that they are generally advisable is what I do not believe. Where the tumor is so bulky as to produce great malposition of the shoulder, forcing the collar-bone far up into the neck, the course pointed out by the English surgeon might be followed with great advantage, as it is calculated to afford the operator much more room than it would otherwise be practicable to obtain. In all other cases, however, a single incision will, I am satisfied, be amply sufficient.

Previously to commencing the operation, the patient should be placed in the horizontal position, upon a narrow table, with his head and chest moderately elevated, and the face slightly inclined towards the sound side. An assistant taking hold of the hand, keeps the affected limb close to the trunk, at the same time that he pulls down the shoulder as much as possible, in order to draw the clavicle away, as it were, from the subclavian artery as it passes from the scalene muscle towards the first rib. The surgeon standing by the side of the patient, above the shoulder, stretches the integuments of the neck upon the upper part of the chest with the fingers of the

*Surgical Anat. of the Arteries, p, 57. First Edition. Baltimore, 1832
†Institutes of Surgery, vol ii, p. 309.

left hand, while with the other he makes an incision, about two inches and a half in length, directly along the middle of the clavicle, commencing at the sternal origin of the mastoid muscle and terminating near the anterior margin of the trapezius. In this manner he should divide the skin, the superficial fascia, and the platysma-myoid. Letting go his hold with his left hand the parts will be found instantly to resume their natural situation, leaving thus the incision on a level with the superior border of the clavicle. The next step of the operation consists in detaching from this bone the deep cervical fascia, or rather aponeurosis, which may be readily accomplished by a few gentle strokes of the handle of the scalpel instead of the point of the instrument, which would greatly endanger the surrounding vessels and nerves. The external jugular vein will be found close to the outer edge of the mastoid muscle, and should be held out of the way with a blunt hook. The supra-scapular artery will also generally appear at this stage of the proceeding, just above and behind the clavicle, or even entirely concealed by it, and should be treated in a similar manner; or, if it be divided, it should be immediately tied. The omo-hyoid lies at the outside of the incision, bound down by a process of the cervical aponeurosis, which should next be torn through with the knife. Taking this muscle for his guide, the operator feels for the tubercle of the first rib, a little to the outside of which the artery will be found pulsating, more or less distinctly, and where it may in general be easily secured by passing the needle from before backwards and from below upwards. Before tightening the ligature, it should be ascertained that it controls the circulation of the aneurismal sac, and above all that it does not include any of the cords of the axillary plexus of nerves; a circumstance which has happened in several of the cases in which this op-

eration has been performed. It should be stated here that whenever the clavicular origin of the mastoid muscle is unusually broad, as it not unfrequently is, it should be divided upon a grooved director. By pursuing this course I am convinced that our approach to the vessel will, in the majority of cases, be greatly facilitated. Particularly will this be the case when the design is to apply the ligature *behind* the scalene muscle.

In this manner the subclavian may, in the generality of cases, be easily reached without much waste of blood, or loss of time. In some instances, however, the operation is rendered extremely difficult, tedious, and embarrassing, owing either to the magnitude of the tumor and the consequent elevation of the clavicle, the diseased state of the artery, an unusual course of the vessels of the neck, or even when these follow their natural direction, the swollen and distended condition of the subclavian vein, some irregularity on the part of the omo-hyoid, an enlarged condition of the cervical lymphatic ganglions, or, finally, the great condensation of the parts from the effusion of plastic lymph. A few remarks on each of these topics must suffice.

1. The *elevation of the clavicle* is generally in direct proportion to the size of the tumor. Sometimes, however, even where the swelling is comparatively diminutive, this bone is much higher up than usual, owing to the peculiar conformation of the individual. In either case the difficulty of finding the vessel will be much increased. In one instance, where the elevation was produced by the enormous developement of the disease, Sir Astley Cooper was forced to abandon the operation altogether. When such a contingency arises, which, on the whole, must be extremely rare, instead of giving up the case in despair, as was done by the English surgeon, the best

plan, it seems to me, would be to divide the anterior scalene muscle, so as to enable us to apply the ligature somewhat nearer the heart, or even on the tracheal side of that structure.

2. The operation is occasionally rendered more or less intricate and embarrassing by the *diseased state of the artery.* In this case, although the vessel may be easily enough approached, it is impossible to apply the ligature at the usual situation. To divide the scalene muscle, or to cut down along its inner margin, for the purpose of securing the vessel in one or other of these points, is here our only resource. The brachial plexus of nerves may also be so much in the way of the operator as to render this course necessary, as happened on one occasion to Dupuytren.

3. The *cervical vessels,* both arterial and venous, are almost constantly in the way of the operator, even when they follow their usual route. This is particularly true of the exterternal jugular vein and of the supra-scapular artery. The former of these vessels, commencing at the angle of the jaw, passes vertically down the neck, under cover of the platysma-myoid. In the early stage of its course it rests upon the sterno-mastoid, afterwards it gets to the outer border of this muscle, and finally, at the inferior part of the neck, sinks behind it, to terminate in the subclavian vein near its junction with the internal jugular. Just before it disembogues, which it sometimes does by several distinct trunks, it receives two pretty large branches, the supra-scapular and transverse cervical, which traverse the neck in a horizontal direction from without inwards, parallel with the arteries of that name. These arteries, as well as their accompanying veins, lie deeply at the root of the neck, especially the supra-scapular, which is frequently concealed for some distance by the clavicle, on a line with which it runs to reach the root of the coracoid pro-

cess: it is generally a branch of the thyroid axis, and rests at first upon the anterior scalene muscle, crossing as it passes outwards the subclavian artery. The course of the transverse cervical artery is nearly similar; but it is usually situated somewhat higher up; it is also considerably smaller, and is most frequently derived immediately from the subclavian.

Now, in attempting to reach the subclavian, it is almost impossible to avoid wounding some of the vessels above mentioned. The external jugular vein is particularly in danger, and can scarcely escape without the utmost coolness and dexterity on the part of the operator. As soon as it is recognized it should be separated from the surrounding structures by a few gentle strokes with the handle of the scalpel, and drawn to the outer side of the wound. This plan is undoubtedly always the best and safest when it can be adopted; however, it sometimes happens that the vessel is so much in our way as not only greatly to embarrass our progress, but absolutely put a stop to it. In this case it must be cut across, or, what is preferable, tied with two fine ligatures, and divided between them. By pursuing this method we not only avoid a troublesome hemorrhage, but effectually prevent the introduction of air into the lower portion of the vessel, an occurrence which should be always guarded against. The supra-scapular artery, if in the way, should be carefully drawn aside, or, if it be wounded, immediately secured. Any bleeding vessels, indeed, no matter whether arterial or venous, provided they pour out a sufficient amount of blood to interfere with the operation, should at once be tied; though no more ligatures should be retained than are absolutely necessary.

4. The inordinate *swelling of the subclavian vein* is another source of embarrassment which is occasionally experienced in operations of this kind. This vessel is usually situated

somewhat below and superficially to the artery, being separated from it by the anterior scalene muscle, upon which it lies. Commencing at the inferior margin of the first rib, where it is continuous with the axillary, it passes horizontally inwards, until it joins the internal jugular vein, within a few lines of the sterno-clavicular articulation. In this course, in which it is almost entirely concealed by the clavicle, it receives the small branches which accompany the different offsets of the artery, as well as the external jugular, which last enters it, as before stated, nearly opposite the centre of the bone, but sometimes more internally. After the division of the cervical aponeurosis in the lower part of the neck, the operator will occasionally observe this vessel alternately to swell and subside, owing not so much, as some have supposed, to the natural flow of the current within it, as to the reflux caused by the action of the right auricle, aided by the hurried and agitated state of the respiratory movements. The difficulty thus occasioned is not only annoying, but sometimes so embarrassing as to render it almost impossible even to see the artery, much less to separate and tie it. To remedy this it has been suggested that the operation should be suspended for a moment, and the patient placed in the semi-erect posture, to allow him to make several full and easy inspirations, after which, it is said, the tension of the vein will be diminished, and the regurgitation of the blood cease. The surest and most expeditious plan, however, that can be adopted is to hold the vessel out of the way by means of a broad blunt hook, or copper spatula, carried down behind the clavicle. In this manner the vein may be effectually compressed to the extent of half an inch, or more, if necessary, and the artery fairly brought into view.

5. The *omo-hyoid* muscle, instead of forming a triangular

space, as it usually does, with the scalene muscle and the clavicle, may run parallel with, and just above, that bone, or even entirely below it. In either case, should it be productive of inconvenience to the operator, he should pass a director under and divide it. Such a proceeding, however, can seldom be called for, as by laying open its sheath the muscle may generally be drawn out of our reach. Two cases in which it became necessary to divide this muscle, before the artery could be exposed, have been reported, the one by Mr. Todd,* of Dublin, the other by Mr. Crossing,† of Davenport, England.

6. The *lymphatic ganglions* at the inferior part of the neck may be so much enlarged as to interfere materially with the different stages of the operation, as happened in a few of the cases of which I have given an abstract. When this state is found to exist, instead of trying to save these bodies, they should be carefully dissected out, as we will thus not only expedite our arrival at the artery, but, what is a matter of no little importance, greatly facilitate the healing of the parts after the vessel is tied.

7. Finally, considerable embarrassment may arise from the *condensed and indurated* state of the parts, caused by the effusion of plastic lymph. This may always be looked for when the disease is of long standing, or the tumor so large as to excite severe inflammation in the deep-seated structures immediately above the clavicle. From this cause the nerves and vessels may be not a little obscured.

If, from the above causes, it be sometimes difficult to denude the artery, to convey the ligature around it will often be found to be much more so. Indeed, this generally constitutes the most annoying and embarrassing step of the opera-

*Dublin Hospital Reports, vol. iii.
†Medico-Chirurgical Trans. vol. xvi, part 2.

tion. To facilitate this procedure various mechanical contrivances have been resorted to, some of them so complicated in their character as to be well calculated to enhance instead of diminishing the difficulty. Under ordinary circumstances every indication may be fulfilled with the common aneurismal-needle; but where the obstacles are unusually great, I know of no better instrument for successfully surmounting them than that of Mr. L'Estrange of Dublin. This consists of a steel needle, somewhat curved but not so much as common, provided with two small eyes, one behind the other, and intended to be united by a fine screw to a narrow cylindrical shaft, about three inches and a half in length, and furnished with a short ivory handle. The posterior eye being armed with the ligature, the needle is conveyed under the artery, and as soon as it appears in front of it, a small hook, passed to the bottom of the wound, is hitched into the anterior eye, when the shaft of the instrument is unscrewed, and the needle drawn round the vessel, which will thus be encircled by the thread. In case this should fail, or be not at hand, the *American* instrument as it is termed, invented by Dr. Parrish of Philadelphia, may be advantageously resorted to. The aneurismal-needle, devised and recommended by Dr. Gibson, is so awkward and clumsy, as it is usually constructed, that it should be altogether discarded from practice. Whatever mechanical contrivance be employed, the surgeon should always proceed, in this stage of the operation, in the most cautious and gentle manner, taking care not to separate the artery unduly from its cellular connexions, or to inflict the slightest violence upon its coats. The ligature, as a general rule, should be passed from before backwards and from below upwards, as it will be found much easier in this way to prevent injury to the subclavian vein, while there will be no danger whatever

of including any of the cords of the brachial plexus of nerves. Owing to the great depth of the wound, great difficulty is sometimes experienced in tightening the knot. In this case the ingenious instrument described by Mr. Liston, in the sixteenth volume of the Edinburgh Medical and Surgical Journal, may be resorted to. That invented by Dr. Hosack, of New York, will also be found very useful. These contrivances, by holding the first knot firm, enable the surgeon to tie a second or third with the utmost facility.

Notwithstanding the assistance to be derived from the different instruments that have been invented for that purpose, such has been the difficulty, in some instances, of conveying the ligature around the artery as to lead not only to great delay, but almost to an abandonment of the operation. It has been suggested, under these circumstances, to saw through the clavicle. To this proposal, which originated, I believe, with Mr. Hargrave, an Irish surgeon, I can see no particular objection, provided the shoulder is so much elevated as to offer an almost insurmountable barrier to the passage of the ligature. By this practice, although a compound fracture of the clavicle would be superadded, yet this would be of the simplest kind, while the operation, instead of occupying from one to two hours, as has repeatedly happened heretofore, could be completed in a comparatively short time ; the vessel could be much more effectually secured, the risk of wounding the subclavian vein and other parts would be greatly diminished, and the patient would have a much better chance for recovery. It is proper to remark, however, that this proposal has been pointedly condemned by some very eminent surgeons, as being both dangerous and uncalled for, and that it has not, so far as my knowledge extends, been hitherto carried into execution.

It will be perceived that the foregoing observations relate exclusively to the subclavian artery in its third stage, or to that portion of it which lies between the inferior border of the clavicle, where it is continuous with the axillary, and the acromial margin of the anterior scalene muscle. It has also been remarked, incidentally, that the vessel has been tied in several instances *behind* that muscle; and it may now be added, in conclusion, that it has been secured not less than three times—perhaps oftener—though unsuccessfully—in the first part of its course, or internal to the scalene muscle. All these operations were performed on the right side, and, what is singular, by Dublin surgeons; first by Mr. Colles in October, 1811; secondly by Mr. Hayden in September, 1835; and thirdly by Mr. O'Reily in April, 1836.*

In Mr. Colles' case the ligature was not tightened until the fourth day from the operation, owing to the occurrence of great dyspnœa and cardiac oppression. On the ninth day the patient, who was a laborer, thirty-three years of age, complained of a sense of strangling and pain about the heart; he then became delirious, and died in a few hours. Not above a quarter of an inch of the subclavian was found free from disease, and on this part the ligature had been applied. Immediately above this point a pretty large opening had been made through the coats of the vessel by ulceration. The tumor, which was of a conical form, reached from the sternal origin of the mastoid muscle beyond the arch of the clavicle, rising nearly two inches above this bone. The operation is

*Since writing the above I learn, by reference to the Philadelphia Medical Examiner for May, that Mr. Partridge, one of the surgeons of King's College Hospital, London, tied the subclavian artery in the first part of its course, for an aneurism which had existed in the vessel for about twelve months. The pulsation in the tumor immediately ceased, and, although every thing went on favorably for a short time, death occurred on the fourth day after the operation.

described as having been exceedingly tedious, on account of the difficulty of passing the ligature.*

In the case operated on by Mr. Hayden death occurred on the twelfth day, preceded by bronchitis and hemorrhage from the wound. The subclavian artery, at the site of the ligature, was gaping irregularly for three-fourths of its caliber, the remainder being sound. The right carotid was considerably enlarged, the surrounding parts were all agglutinated by plastic lymph, and the tumor extended to the anterior scalene muscle, beneath the clavicle, and between the branches of the brachial plexus of nerves. Its contents were throughout solid and laminated. A small aneurism was found on the axillary artery. No attempt at restoration could be discovered. The patient was an unmarried woman, of intemperate habits, fifty-seven years of age. The disease had existed about ten months.†

The subject of Mr. O'Reily's case was a stout robust man, thirty-nine years of age, for the last twenty years of which he has been employed as a stable servant. The aneurismal tumor, which had been first observed the preceding February, was somewhat of an oval shape, distinctly circumscribed, and measured two inches and a half in one direction by two inches in the other. The operation was performed on the sixteenth of April; hemorrhage occurred on the fourteenth day; on the twenty-second day the patient had troublesome cough, with a return of the bleeding; and the next day, the twenty-third, he expired. On opening the body at least twenty ounces of grumous blood were found in the wound, along the trachea, and between the spine and the apex of the right lung, which was slightly hepatized. The pleura and

*Edingb. Med. and Surg. Journal, vol. ii. January, 1815.
†Lancet, Oct. 7, 1837.

bronchia were also inflamed, the carotid thickened and enlarged, and the divided extremities of the subclavian, jagged and irregular, were patulous and separated nearly two inches by coagula. Not the slightest attempt had been made at reparation. The aneurismal tumor, four inches in length, extended from the acromial margin of the scalene muscle to the commencement of the axillary artery, which had a similar swelling, about an inch in diameter, connected with it. The operation occupied twenty-five minutes.*

It is worthy of remark that in two of the above cases the patients were affected with *acute bronchitis*, brought on, in all probability, by the injury inflicted upon the parts in the immediate vicinity of the right lung. What the precise condition of that organ was in the individual operated on by Mr. Colles, is not known, as the post mortem inspection seems to have been very hasty and imperfect. In neither of the cases had there been any attempt at the reparative process, although in one of them, that of Mr. O'Reily, life was protracted until the twenty-third day after the operation; the artery in all was in a state of ulceration, and in two of them death was preceded by hemorrhage from the wound. So far, therefore, as these examples go, they hold out no inducement whatever for a repetition of the operation. Nevertheless, there is no reason why we should despair; for, as has been very justly observed by Dr. Colles, who was the first to tie the vessel in this situation, the history of surgery furnishes parallel instances of proceedings, now generally adopted, which, in the few first instances, failed of success. Mr. Hayden of Dublin, under a belief, in all probability well founded, that the impetus of the blood, in consequence of the close proximity of the heart, has a great share in disturbing the sanative process set

*Flood on the Surgical Anatomy of the Arteries, p. 74. London: 1837.

up by nature at the site of the ligature, suggests the propriety of securing both the common carotid and subclavian at the same time. A coagulum, he thinks, would thus soon form, which would close up these vessels on the cardiac side of the ligature, as well as the whole arteria innominata. Although this ingenious suggestion has not yet been acted upon, it is certainly worthy of consideration, emanating, as it does, from an able and distinguished surgeon.

I shall close this paper, already extended greatly beyond what was originally intended, with an account of the operation of tying the subclavian artery, in the first part of its course, as performed by Mr. O'Reily, of Dublin.

Standing by the patient's right side, whose head was slightly depressed and turned to the left, Mr. O'Reily first drew down the common integuments of the inferior part of the neck over the clavicle with his left hand, and then cut freely on the bone, beginning his incision about the centre of the clavicular origin of the right mastoid muscle, and extending it across the trachea as far as the centre of the sternal attachment of the left mastoid muscle; the whole being about four inches in length. Another incision was next made through the skin along the internal margin of the right mastoid, so as to meet the preceding at its middle: in the same line he divided successively on a director the superficial fascia and platysma-myoid. The sternal origin, with the inner-half of the clavicular, of the right mastoid muscle was divided transversely close to the bone, and detached. On introducing a finger the course of the carotid artery could be distinctly seen and felt. The deep aponeurosis, together with a little of the internal margins of the sterno-hyoid and sterno-thyroid muscles, was next divided, so as to expose the carotid, the sheath of which was pinched up with a pair of forceps, and cautiously

opened horizontally. A blunt silver instrument, of the size of a small scalpel, with a round point, was used in the subsequent steps of the operation. The carotid being taken as a guide, the subclavian artery was easily exposed lying at the bottom of a very deep cavity. The jugular vein was drawn outwards by means of a curved spatula, and the pneumo-gastric nerve inwards. The artery was then secured with L'Estrange's needle, described in a preceding page, passed from below upwards, the ligature tightened, and the wound closed with two adhesive straps.*

On the left side the vessel is so deeply seated and in such intimate relation with the bag of the pleura, the carotid artery, the internal jugular vein, the pneumo-gastric nerve, and the thoracic duct, that the deligation of it must be considered as altogether impracticable. At all events no attempt of the kind has yet been made, nor is it likely that, if it should be, it would prove successful. From the severe injury that would necessarily be inflicted upon the surrounding structures, during the performance of the operation, violent and fatal inflammation would be the inevitable and speedy consequence.

It is my intention, in a future number of the journal, to make some remarks on aneurism of the carotid, iliac, femoral, and popliteal arteries, considering the subject in reference to the age of the patient, the causes and duration of the disease, the effects of treatment, both palliative and radical, and various other circumstances, which it is unnecessary here to specify.

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*Flood, op. cit., p. 80.

Erratum.—Page 416, line 20, for twenty-seven read twenty-six.

REVIEWS.

Researches on the Pathology and Treatment of some of the most important Diseases of Women: by Robert Lee, M. D., F. R. S., Physician-Accoucheur to the British Lying-in Hospital and the Saint Mary-le-Bone Infirmary; Lecturer on Midwifery in the School of Webb street; London, 1833. pp. 220.

(Concluded from page 304.)

The next disease, which it was the object of Dr. Lee's researches to elucidate, is *phlegmasia dolens*, the pathology of which has been so variously interpreted by different writers. From Mauriceau, who was the first to describe it and who attributed the swelling of the lower extremity to a reflux upon the parts of certain humours which ought to be evacuated by the lochia, through Levret, Puzos, White, Ferriar, Hull, &c. down to Dr. Lee, who thinks he has proved it to be crural phlebitis *commencing in the veins of the uterus*, every variety of hypothesis, which the imagination could suggest, has been framed to explain the phenomena of this singular malady. After all we are not sure that the disease is entirely unveiled, though it must be confessed that the investigations of our author have shed much light upon it. It cannot be doubted that in the cases reported by Dr. Lee, inflammation of the

iliac and femoral veins was present and consequently that phlebitis is at least a part of the disease, if it be not the whole or the primitive and essential lesion. That the reader may form his own judgment of the correctness of this statement, we proceed to lay before him the facts and observations collected by our author.

Twenty-two examples of the disease in puerperal women came under the immediate observation of Dr. Lee; in seven of these the disease commenced between the fourth and twelfth days after delivery, and in the remaining fifteen, it appeared subsequent to the end of the second week after parturition. The author shall be allowed to speak for himself as to the observations which he made on these cases:

"In most of the patients there was either an attack of uterine inflammation in the interval between delivery and the commencement of the swelling in the lower extremity, or there were certain symptoms present, which I have before described as characteristic of venous inflammation, viz. rigors, headache, prostration of strength, a small rapid pulse, nausea, loaded tongue, and thirst.

"The sense of pain at first experienced in the uterine region has afterwards been chiefly felt along the brim of the pelvis, in the direction of the iliac veins, and has been succeeded by tension and swelling of the part. After an interval of one or more days, the painful tumefaction of the iliac and inguinal regions, has extended along the course of the crural vessels, under Poupart's ligament, to the upper part of the thigh, and has descended from thence in the direction of the great blood-vessels to the ham. Pressure along the course of the iliac and femoral vessels has never failed to aggravate the pain, and in no other part of the limb has pressure produced much uneasiness. There has generally been a sensible fulness perceptible above Poupart's ligament before any tenderness has been experienced along the course of the femoral vessels; and in every case at the commencement of the attack, I have been able to trace the femoral vein proceeding down the thigh like a hard cord, which rolled under the fingers.

"A considerable swelling of the limb, commencing in the

thigh and gradually descending to the ham, has generally taken place in the course of two or three days, and in some cases immediately after the pain has been experienced in the groin. In other cases the swelling has been first observed in the ham or calf of the leg, and has spread from these parts upward and downward until the whole extremity has become greatly enlarged. The integuments have then become tense, elastic, hot, and shining, and in most cases where the swelling has taken place rapidly, there has been no pitting upon pressure, or discolouration of the skin. In several well-marked cases, however, of crural phlebitis at the invasion of the disease, the impression of the finger has remained in different parts of the limb, more particularly along the tibia; but as the intumescence has increased, the pitting upon pressure has disappeared, until the acute stage has passed away. At the onset of the disease I have also observed, in several cases, a diffuse erythematous redness of the integuments along the inner part of the thigh and leg. In one individual only, has suppuration of the glands taken place in the vicinity of the femoral vein; but in several, by an extension of the inflammation, the inguinal glands have become indurated and enlarged. In some women the inflammation of the femoral vein has appeared to be suddenly arrested at the part where the trunk of the saphena enters it, and the inflammation has extended along the superficial veins to the leg and foot. The swelling and pain in these instances have been greatest along the inner surface of the thigh, in the course of the saphena veins. In most cases of crural phlebitis, not only the whole lower extremity, but the nates and vulva, have been affected with a glossy, hot, colourless, and painful swelling, which has not retained the impression of the finger."

The above, which may be considered a very fair description of the acute stage of phlegmasia dolens, points very manifestly to the veins of the affected limb as the seat of morbid action. Evidence of this fact more conclusive still was furnished in the second stage of the malady, when upon the general disappearance of the swelling, first of the thigh and then of the leg and foot, in one case, "large clusters of dilated superficial veins were seen proceeding from the foot, along the leg and thigh, to the trunk; and numerous veins as large as

a finger were observed over the lower part of the abdominal parietes."

With the view to illustrate the phenomena of inflammation of the iliac and femoral veins in puerperal women, Dr. Lee relates eight cases which terminated fatally, and in which post mortem examinations were made. One of these cases we quote entire, asking particular attention to the facts revealed by the autopsy.

"Mrs. Edwards, æt. 35, No. 54, King-street, Long Acre, 16th of April, 1829, was delivered of her second child, three weeks ago, after a natural labor, and on the 9th instant was attacked suddenly with pain in the calf of the right leg, and loss of power in the whole right inferior extremity. On the 13th, a considerable swelling, without discolouration, had taken place from the ham to the foot, and great tenderness was experienced along the inner surface of the thigh to the groin. The extremity is now universally swollen, painful, and deprived of all power of motion. The temperature along the inner surface of the limb is increased; the integuments are pale and glistening, and do not pit upon pressure. There is no pain in the hypogastrium, but pressure along the course of the crural vessels excites great suffering, and the vein from the groin to the middle of the thigh is indurated, enlarged, and exquisitely sensible. There is also great sensibility in the ham, and along the inner surface of the leg to the ankle, and where some branches of the superficial veins are hard and painful on pressure. Pulse 80. Tongue much loaded; thirst. Bowels open. It is reported that there was no rigor or symptom of pyrexia, at the invasion of the disease. Twelve years ago, after the birth of her first child, the patient and her relatives state, that she experienced an attack similar to the present in the same limb, and that it remained in a weak condition for several months afterwards, but ultimately recovered its natural size and power.

"18th of April. The tension and increased heat of the limb are somewhat diminished, but the pain continues in the course of the vessels. May 1st. Affection declining. The femoral vein cannot now be felt, but there is still a sense of tenderness in its course down the thigh. No pitting on pressure. She has suffered, during three or four days, considerable uneasiness between the umbilicus and pubis, as well as in the

loins, and has had rigors, with quick pulse, loaded tongue, and thirst. The abdomen is soft, but tender on pressure around the umbilicus. 9th. The swelling of the limb is nearly gone, as is the tenderness in the course of the femoral vessels. For several days past, she has experienced attacks of acute pain in the umbilical region, loins and back, which have assumed a regular intermittent form. Every afternoon there has been a violent rigor of an hour's duration, followed by increased heat and profuse perspiration. In the course of the last and preceding nights, there has been slight delirium. The skin is now hot and dry. Pulse 125; tongue brown and parched. Bowels open. The abdomen is neither tense nor swollen. On pressing around the umbilicus, she complains of a deep-seated feeling of soreness. A strong vibratory motion corresponding with the pulsations of the heart, is perceived in the epigastrium.

"21st. The febrile attacks gradually declined in severity, and she appeared to be recovering until yesterday, when she had a long and violent fit of cold shivering. The pulse is extremely rapid and feeble, and the countenance expressive of deep anxiety. There remains no trace of the affection of the lower extremity. 23rd. Has been vomiting at intervals ever since yesterday. Complains of great pain in the left side, increased upon taking a deep inspiration. Pulse 120. 24th. Great prostration of strength and delirium. Surface of the body has assumed a peculiar sallow tinge. The conjunctiva of the right eye has suddenly become of a deep red colour, and so much swollen that the eyelids cannot be closed. The cornea is dull, and she makes little complaint of pain of the eye, and there is no intolerance of light.

"5th. Repeated attacks of vomiting. Debility rapidly increasing; respiration hurried; incessant hacking cough. Pulse 140, feeble; surface of the body cold and clammy. Tongue and teeth covered with dark sordes; diarrhœa. The left eye has also become red and swollen, without much increased sensibility. 26th. Great debility; when undisturbed she is delirious, but seems conscious when roused, and complains of pain in the left side of the chest. Pulse 140. Tongue black and dry. Conjunctiva of left eye also affected with swelling and intense redness. The cornea is dull, and shreds of lymph have been effused over the left iris.

"2d. June. Vision lost. Eyes swollen and pushed forward from the orbits. Great debility. A red puffy swelling has suddenly appeared over the right elbow joint. Diarrhœa. Constant wandering. Hurried and laborious respiration. 15th, died.

"*Inspection.*—Thorax: In its left cavity were contained, upwards of two pints of a thin purulent fluid, and extensive recent adhesions existed between the pleura covering the lower margin of the superior lobe, and the pleura costalis. The substance of this lobe was of a dark colour, approaching to black, and soft in texture, so as to be readily broken down with the fingers. In its centre, about an ounce of cream-coloured pus was found deposited in the dark-coloured and softened lung. This was not contained in a cyst, or membrane, but infiltrated into the pulmonary tissue. In the right cavity of the chest, recent adhesions also existed at the inferior part. A portion of the right inferior lobe was entirely changed from the healthy structure, being converted into a dense, solid, dark-coloured mass. On the anterior surface of this lobe, the pleura was elevated as if by a hard irregular tumor, but when cut into, no pus escaped from this part, and it presented only the appearance of the surrounding portions of lung, with a greater degree of condensation.

"*Vena cava inferior.*—Coats of the vessel considerably thickened, and the internal, where visible, of a scarlet colour; its whole cavity occupied by a coagulum, distending it to its utmost extent, and terminating in a loose pointed extremity, about an inch below the entrance of the vena cava hepatica. The coagulum, covered with a membranous-like investiture of a bright red colour, throughout firmly, and in many places, inseparably adherent to the inner lining of the vein; the substance within it varied in consistence and colour, in some parts it presented the appearance of coagulable lymph; in others, it was a pultaceous dull yellow mass, made up apparently of pus and lymph, blended together. The exterior of the firmer portions were separated into layers, which gradually disappeared as they approached the centre. The mouths of all the veins emptying themselves into the cava were sealed up, the emulgents excepted; the coagulum, near the entrance of these vessels, hanging loosely within the cava.

"*Left common iliac, and its branches.*—Its interior plugged up with a continuation of the coagulum from the cava, and differing in no respect from it, either as to consistence, colour, or the firmness of its adhesions to the inner tunic of the vein; it was continued beyond the entrance of the internal iliac, (which it completely closed,) and terminated in a pointed extremity about the middle of the external iliac; neither the remainder of this vessel, nor the femoral vein, exhibited any morbid changes. The internal iliac was much contracted, and lined with a thick adventitious membrane.

"*Right common iliac, and its branches.*—This vessel was

contracted to more than one half of its natural size; it was firm to the touch, and of a greyish blue colour; to its internal coat adhered an adventitious membrane of the same colour, containing within it a firm coagulum, made up of thin layers of dense lymph. The internal iliac was rendered quite impervious by dense dark-coloured bluish membranes, and at its entrance into the common iliac converted into a solid cord.

"The contracted external iliac, contained within it a soft yellowish coagulum, similar to that in the cava; its coats were three or four times their natural thickness, and lined with dark-coloured membranous layers.

"*The femoral vein*, from Poupart's ligament to the middle of the thigh, was diminished in size, and almost inseparable from the artery. Its tunics were thickened, and its interior coated with a dense membrane, surrounding a solid purple coagulum strongly adherent to it. The superficial, and deep femoral veins, were in a similar condition; and the saphena major, and minor, differed from the femoral veins only in the size of the coagulum they contained, which was slender, and had formed no adhesions with the layers of lymph lining their cavity. The cellular membrane, and other textures of the limb, were in a perfectly healthy condition, and in size and appearance, there was externally no visible difference between the two extremities."

In the above case there was the most conclusive evidence of the existence of venous inflammation, to the extent disclosed by the examination; but the uterine veins were not inspected, because at the date of its occurrence Dr. Lee was ignorant of the fact, which his subsequent cases taught him, that they too are implicated, as was proved by their being found with their coats thickened and their calibres contracted and plugged up with coagula and adventitious membranes, from the branches in the uterus to the termination of the hypogastric in the iliac veins. By this discovery Dr. Lee advanced a step further than Dr. Davis, who before him had maintained that phlegmasia dolens depends on inflammation of the iliac and femoral veins, and supported his views by cases and dissections.

Dr. Lee gives several cases of crural phlebitis in women, arising from suppressed menstruation, malignant ulceration of the os and cervix uteri, as well as some other organic diseases of the uterine organs, and also in men, commencing sometimes in the hemorrhoidal or vesical veins, but more frequently from inflammation of the superficial veins of the leg, excited by injuries, ulcers, exposure to cold, &c.; which our limits will not permit us to notice particularly, and we shall close our examination of this part of the work with a brief analysis of the section on the *treatment of crural phlebitis in puerperal women.*

When we reflect upon the evidently inflammatory character of this painful malady, whether, with our author, we believe the inflammation to be seated in the veins, or, with others, in the white lymphatic vessels of the cellular tissue of the limb, we should be led to suppose that bloodletting would be found to be applicable to all cases. In fact Dr. Dewees and others prescribe bleeding unreservedly and direct its repetition, if necessary, until the force of the circulation is subdued and the violence of the pain abated. But Dr. Lee avers that in all the cases he has seen there has been so much feebleness of pulse, and prostration of strength, that he did not venture to draw blood from the arm, but trusted for the relief of the inflammation to the repeated application of leeches above and below Poupart's ligament in the course of the crural veins.

In commencing the treatment of a case of phlegmasia dolens, the judicious practitioner will not be governed by the experience or theoretical views of any one, or any speculative notions of his own, in deciding on the propriety of general bleeding. He will bleed or not, according to the strength and ability of his patient to bear the loss of blood, and the de-

gree and kind of constitutional disturbance that may attend. Should the peculiar train of symptoms be present, which mark the existence of phlebitis, bleeding is not so promising a remedy as in other phlegmasiae, and experience would seem to forbid its employment. If such symptoms are not developed, either because there is no inflammation of the veins or pus has not been poured out to taint the healthful current of the blood, and the attendant fever, pain, &c. demand it, bleeding may be practised with as much freedom as in other inflammatory affections.

Purgatives, in most acute diseases a valuable class of remedies, are peculiarly indicated in phlegmasia dolens, because, as Dr. Lee remarks, the bowels are often much disordered, and with him we entirely agree in preferring repeated small doses of calomel and antimony, because the best effects are obtained from them and they are more generally applicable in puerperal maladies than any other cathartics. Dr. Dewees, who is very high authority in this country, is partial to saline purgatives, and directs drachm doses of Epsom salts and calcined magnesia until they operate freely.

Opium, condemned by many, may be advantageously used after bleeding and purging; indeed, its employment is indispensable to procure rest and relief from pain. The best form for administering it is in the Dover's powder, whose exhibition may be so timed as not to interfere with the operation of the purgative medicines.

With respect to topical applications, some patients derive the greatest relief from warm cataplasms, and others from cold or tepid evaporating lotions, such, for example, as a solution of sugar of lead, vinegar and laudanum. When the acute inflammatory symptoms have passed away, and the limb remains in a weak and œdematous state, advantage may be de-

rived from frictions, gently stimulating liniments, and the flannel roller.

The last subject treated of by Dr. Lee is Uterine Hemorrhage, than which there is none of more importance in the whole range of practice; and our author very properly enters into an enquiry concerning *the connexion of the placenta and fœtal membranes with the uterus, and the process employed by nature for the purpose of suppressing uterine hemorrhage*, in order to obtain a solid foundation for his practical precepts. The celebrated John Hunter described the placenta as consisting of two distinct portions, a fœtal and maternal one, united together, and having connexion with the uterus by means of large arteries, passing into the outer or maternal portion and opening into supposed cells, from whence the blood is taken up by large, wide-mouthed veins and conveyed back to the maternal system. This account, corroborated by his brother, Dr. William Hunter, has been very generally received as correct by subsequent writers and teachers until very recently; but Dr. Lee ventures to impugn it, and with Velpeau and others has succeeded, we think, in demonstrating its untenableness. The placenta is in fact but an appendage of the fœtus, is composed essentially of the ramifications of the umbilical arteries and veins, and has but slight connexion with the uterus, there being no blood-vessels passing between them except nutrient ones of small calibre. As this statement is at variance, if we mistake not, with the prevailing belief of the profession at the present time, we shall fortify it by the lucid description given by our author of what he has repeatedly seen.

"If an incision be made through the parietes of the gravid uterus, where the placenta does not adhere, the membrana decidua will be observed lining the internal surface, and nu-

merous minute blood-vessels and fibres passing from the inner membrane of the uterus to the decidua. At the circumference of the placenta, the membrana decidua separates from the chorion and amnion to pass between the uterus and placenta, and thus forms a complete membranous septum, which is interposed betwixt these organs. The chorion and amnion cover the fœtal surface of the placenta; and between these two membranes and the decidua lie the ramifications of the umbilical vein, and arteries subdivided to an almost indefinite extent, and connected together by white slender filaments running in various directions. The placenta thus consists solely of a congeries of the umbilical vessels, covered on the fœtal surface by the chorion and amnion, and on the uterine surface by the deciduous membrane and enclosed between these membranes; it adheres to the fundus, or some part of the uterus, by innumerable flocculent fibres and vessels.

"On detaching the placenta carefully from the uterus, the deciduous membrane is found to adhere so closely to the umbilical vessels which it covers, that it is impossible to remove it without tearing these vessels. With the fibres uniting the placental decidua to the uterus, are mingled numerous small blood-vessels, proceeding from the inner membrane of the uterus to the decidua; and these vessels, though more numerous at the connexion of the placenta with the uterus, exist universally throughout the whole extent of the membrane. There is no vestige of the passage of any great blood-vessel, either artery or vein, through the intervening decidua, from the uterus to the placenta; nor has the appearance of the orifice of a vessel been discovered, even with the help of a magnifier, on the uterine surface of the placenta. This surface of the placenta, deprived of the deciduous membrane, presents a mass of floating vessels, its texture being exceedingly soft and easily torn; and no cells are discernible in its structure, by the minutest examination."

How then, it may be asked, could the Hunters have been so deceived when they described large vessels passing and repassing between the uterus and placenta? An explanation is to be found in the manner in which their researches were conducted; they did not dissect the gravid uterus in its *natural* state, but after its arteries had been filled with injections of wax forcibly thrown into them. No wonder was it that

after this an irregular mass of injected matter should be found between the placenta and uterus, and portions of this same matter contained in the substance of the placenta itself; into these it would readily escape by extravasation. But Mr Hunter found, moreover, on separating this layer of wax interposed between the placenta and uterus, that regular pieces of wax were broken off, which could be traced into the arteries and veins of the uterus. Such are the appearances exhibited by a preparation of the uterus with the placenta adhering to the inner surface in the Museum of the Royal College of Surgeons in London, which is supposed to have been put up by Mr. Hunter himself fifty or sixty years ago. This important preparation, which for half a century has been regarded as affording proof of the cellular structure of the placenta and a communication by great arteries and veins between these and the uterus, Dr. Lee has carefully examined, and he considers it demonstrative of the fact that no such communication exists—the wax having escaped from the orifices of the uterine veins. This singular anomaly in the vascular structure of the uterus we had an opportunity of examining most satisfactorily winter before last, and demonstrating it to the medical class. On the inner surface of the uterus, where the placenta had been recently attached, may be seen a number of smooth, well defined orifices of veins, some of them sufficiently large to admit the tip of the little finger. These orifices, which play an important part in the floodings that sometimes occur in the latter months of gestation, and also during and shortly after labor, are well described by Dr. Lee in the following quotation:

"At that part of the surface of the uterus to which the placenta has been adherent, there are observable a great number of openings leading obliquely through the inner membrane of

the uterus, and large enough to admit the point of the little finger: their edges are perfectly smooth, and present not the slightest appearance of having been lacerated by the removal of the placenta. In some places they have a semilunar or elliptical form, and in others they resemble a double valvular aperture. Over these openings in the inner membrane of the uterus, the placenta, covered by deciduous membrane, is directly applied, and closes them in such a manner that the maternal blood, as it flows into the uterine sinuses, cannot possibly escape either into the cavity of the uterus or into the substance of the placenta."

With regard to the natural resources for preventing and arresting uterine hemorrhage, on the promotion of which our hopes of relieving this formidable accident must depend, Dr. Lee holds the following language, which, as it accurately embodies our own views, we give without comment.

"After the separation of the placenta in natural labour, the contractions of the uterus, and the formation of clots within its cavity, and in the orifices of the uterine sinuses, are the principal means employed by nature for arresting the flow of blood. The semilunar or valvular-like edges of the vessels at their termination in the inner surface of the uterus, are admirably adapted to ensure the effect of arresting the current of blood through these passages by the contraction of the fibres with which they are every where surrounded. However excited the circulation in the uterine vessels may be, the structure of the parts is such, that flooding cannot take place from a contracted uterus after the expulsion of its contents. All the different means which have been hitherto recommended for checking the effusion of blood in uterine hemorrhage produce their effect either by exciting contraction of the uterus, and the subsequent closure of the bleeding orifices, or by promoting the coagulation of the blood itself within them."

Our author devotes separate chapters to the consideration of hemorrhage occurring during pregnancy, according as the placenta may be attached over the os uteri or to the fundus and body of the organ,—recognizing to the fullest extent the important practical distinction first made by Levret in France,

and since more generally known to English and American practitioners through the writings of Mr. Rigby of Norwich. In the first case, towards the close of pregnancy, hemorrhage is *inevitable* from the expansion of the cervix uteri, while in the second it is entirely casual or accidental: in both, however, the effusion of blood is owing to the separation of the placenta, to a greater or less extent, and the consequent exposure of some of the large venous openings that have been described. In both, also, the hemorrhage being purely passive can only be arrested by a power extraneous to the vessels themselves, and this power resides in the contraction of the muscular fibres of the uterus. Here, however, the parallel ceases; when the placenta is attached over the os uteri, the contractions of the organ tend immediately to increase the hemorrhage by breaking up still further the attachments of the placenta, and hence the increased flow of blood during the pains; on the other hand, when the placenta is attached to a higher portion of the uterus, the immediate effect of muscular contraction is to diminish the discharge or to intercept it altogether, provided it can be efficiently exerted. On this difference is founded the different treatment which these two kinds of hemorrhage exact; artificial delivery being the remedy for the inevitable hemorrhage, while rupturing the membranes to allow the organ to contract more powerfully is the remedy for the accidental.

With regard to delivery as a means of relieving hemorrhage of the first species, the conditions necessary to insure the success or even the safety of the operation should never be lost sight of, viz., a soft and dilatable state of the os uteri, and until this takes place our author very properly recommends the recumbent postute, cold applications to the hypogastrium and pubis, and the introduction of a large piece of soft sponge

within the vagina, as the remedies on which the greatest reliance is to be placed, until delivery is safely practicable. Against the last of these measures, Dr. Meigs objects in his excellent manual, the Philadelphia Practice of Midwifery, and we took the opportunity afforded by a notice of his work in a former number of this Journal, to express our dissent from the views inculcated by him. What was said on that occasion need not be repeated; we are thoroughly satisfied that the tampon is the most valuable resource which can be commanded in these critical cases, but it must be employed with judgment. Dr. Lee, for example, very pointedly and properly forbids the tampon when the os uteri is soft and yielding, because then it is no longer to be relied on and is no security against dangerous, concealed hemorrhage, while he commends it as a valuable remedy in rigid undilatable states of the os uteri, to command the flow of blood until the proper time for delivery arrives.

The treatment of accidental hemorrhage has already been indicated in general terms; Dr. Lee describes it more particularly in the following extract:

"Although there should be little or no disposition in the uterus to contract and expel the child, if the flooding continues and the strength of the woman is obviously much impaired by it, the fœtal membranes should be ruptured, the liquor amnii evacuated, and the uterus roused to contraction by friction over the hypogastrium, and the dilatation of the os and cervix uteri by two fingers introduced within them. If there are labor pains there will be little difficulty in tearing the membranes with the point of the finger when they are tense; if there are no pains the best mode of perforating the membranes is to introduce a slender silver catheter through the mouth of the womb, and carry it forward till the membranes are pierced and the liquor amnii begins to escape. I have seen more than one fatal case of uterine hemorrhage, where the practice of Puzos was adopted, but I am convinced, had the membranes been ruptured before the powers of the sys-

tem and of the uterus had been less impaired, the result would have been different."

Here we have a correct enumeration of the several operative procedures which are so well known and generally employed since the time of Puzos: but we regret to observe, nevertheless, a departure from the *method* of that distinguished and original writer, which, if we mistake not, has led to disappointment and even fatal results in the hands of Ramsbothan and others. According to our author the membranes are first to be ruptured and then the uterus is to be roused to contraction, thus reversing the order of Puzos, who excited the uterine contractions first by stimulating the os uteri with the finger, and then ruptured the membranes, as soon as they are observed to become tense during the pains. In this manner uterine contraction, the great desideratum, is insured, without which the evacuation of the liquor amnii is worse than useless, because, in the flaccid condition of the organ which immediately ensues and may continue for hours or days, blood may be poured out in greater abundance than before, and the practitioner be driven to deliver at last in an exhausted condition of his patient. Such were precisely the circumstances attending some of Ramsbotham's most instructive cases, while in the hands of Rigby, Puzos's method, closely pursued, was infallible. H. M.

Selections from American and Foreign Journals.

The Case of the late William Henry Harrison, President of the United States. Reported by Thomas Miller, M. D., &c., Washington City.—On the 26th of March, 1841, at 5 o'clock, P. M., I was summoned to visit President Harrison. I found him slightly ailing, although not confined to his room. He complained of having been somewhat indisposed for several days, which he attributed to the great fatigue and mental anxiety he had undergone; stated that he had taken medicine, had been dieting himself, and believed that he would soon be well again; that he had sent for me, not to prescribe, being always his own physician in slight attacks, but to confer with me respecting some of the peculiarities of his constitution, which he thought it important that his physician should be aware of. He mentioned his liability to neuralgia, affecting his head, stomach, and often his extremities; that he had been, early in life, a martyr to dyspepsia; that for the last few years he had avoided these dyspeptic attacks by a system of diet, confining himself principally to animal food; he had been starving himself for a few days past, in consequence of some return of his old dyspepsia; that when sick, he always required a very stimulating practice; that he slept but little, going to bed early, and rising very early; that he attributed his good health during the last few years to that circumstance. I advised that he should avoid all excitement, that he should remain quiet the next morning in bed, and intermit his official business, which he promised to do. At his request, I called in the evening at 8 o'clock, found him in his parlor, with several of his old military friends; he informed me that he felt much better than he had done for some days; that he thought he would have a good night, and be well by the morning: he was cheerful, and joined in the conversation.

Saturday, March, 27th.—At 1 o'clock, P. M., I was suddenly summoned to visit the President; found him in bed; told me that he had been attacked about an hour and a half previously with a severe chill; that as usual in the morning he had risen at about 4 o'clock, taken a walk around his grounds, and then to the market-house, and returned to breakfast at half past 7 o'clock; that he had been much occupied all the morning with business, and that the chill had attacked him while engaged with his cabinet. I prescribed the ordinary remedies, such as mustard to the stomach, heat to the extremities, additional bed-clothing, and warm drinks. The reaction was slight, and perspiration readily induced by a gentle diaphoretic draught, tartar emetic, with the spiritus Mindereri, and diluents.

I visited him at 5 o clock, P. M.; his condition was much improved; his skin warm and moist; his thirst allayed; he was cheerful, and said he was satisfied he should have a good night, and be well in the morning; his pulse was soft, about seventy-five; complained only of a slight pain over the right eye, which he considered neuralgic; and which he thought from his own experience would subside in a few hours, and therefore declined using any remedy for it. His tongue being slightly furred, and his bowels not having been moved for two days, I ordered to be taken, at bed time, the following:

℞ Mass Hydrarg. gr. x.
Ex. Colocynth. Comp. gr. iij.
M. ft. pil. No. iij.

this being a medicine which he stated always acted kindly. I left him about half past 6, even more comfortable than at 5.

Sunday, March 28th.—At 4 o'clock, A. M., I was summoned to visit the President; found that at about 12 o'clock at night he had been seized with a violent pain over the right brow, and in his right side, from which he still continued to suffer; the pains were intermittent, equally increased by deep inspiration and motion, but not by pressure; contrary to his expectation he had slept but little during the night,—none, since the onset of the pain; he complained of thirst; his tongue was dry; his mouth clammy; his skin warm and moist; pulse eighty, and soft; occasionally great nausea. He attributed his pain to the want of an operation from his bowels, which were uneasy. I ordered enemata, sinapisms, with warmth to the part affected, and gave him a Seidlitz powder. Half past 8.—More easy, and disposed to sleep; bowels had been gently opened by the enemata. Ten o'clock.—Has had several light naps; expressed himself much relieved from the

pain in his side and head; in other respects much the same as when I left him at half past 8. Finding the bowels had not been sufficiently moved by the injection, which were repeated once or twice, and caused small, dark, offensive, fluid evacuations, with a few lumps of indurated fæces, ordered one of the following pills to be given every two hours:

℞	Hydrarg. Chlorid. Mit.	gr. xij.
	Pulv. Rhei	gr. xv.
	Camphoræ	gr. vj.
	M. ft. pil. No. vj.	

and left directions that in my absence, should the pain return, cups should be freely applied so the side. Upon visiting the President, I received the following report:—At half past 11 he was very restless; objected to all local applications to his side; applied laudanum to the rectum to remove the unpleasant effects produced by the injection; gave a pill at 12; pain being increased, at his request applied laudanum to the part; slight chilliness about half past 12, requiring warm applications to his extremities; at 1 o'clock, inclined to perspiration; at 2 gave the second pill, soon after which he had a small discharge of black, fœtid water, similar to those produced by the injection early in the morning. At half past 2 I saw him; his skin was warmer and drier than it had been; pulse somewhat accelerated; his breathing more hurried; tongue and fauces dry; thirst intense; face a little flushed. Upon examination was satisfied that the lower lobe of the right lung was the seat of pneumonia, complicated with congestion of the liver; but that the acute pain was neuralgic. Continued pills; had cups applied over the side affected; Granville's lotion to the spine, and over the brow. He was relieved very much, although the quantity of blood taken by the cups was very small; he felt the effect of its loss, breaking out into a free perspiration, complaining of nausea, and a sense of faintness. It is proper to state that my intention after the examination was to bleed from the arm; but upon witnessing the effect that position had on his pulse, &c., I preferred the cups.

3 *o'clock.*—Applied a blister over the side, and gave twenty drops of laudanum, with one of the pills. At 4, finding him much relieved by the laudanum, and not having yet procured a free evacuation from the bowels, gave him five grains more of calomel, with ten drops of laudanum; this in a few minutes quieted his stomach, relieved his pain, and he fell into a sweet and calm sleep. From the nature of the case, I felt uneasy respecting the result, and asked for a consultation. At the request of the President and his family, I met Dr. F. May, at

6 o'clock, P. M. We agreed entirely as to the character of his disease, and that the present treatment be continued.

29*th.*—7 *o'clock, A. M.* Met Dr. May. The President had an uncomfortable night, being somewhat disturded in his breathing with a slight dry cough; urinated freely, and passed several small black and fœtid stools; had taken two of the pills, with the addition of three grains of calomel, and on account of his restlessness, three grains of Dover's powder. At this time his pulse was eighty, and soft; skin warm and moist; slight dull pain in his side more permanent; the bowels not having been freely opened, I ordered a small dose of castor oil, with demulcent drinks.

2 *o'clock.*—Met Dr. May. The President had failed to take the oil; had taken small quantities of the demulcents, with mutton broth; had slept quietly occasionally through the day; breathes heavily when lying on his back; has had but little cough; no expectoration; has had one dark fluid evacuation from the bowels, and passed his watar several times; small in quantity and high coloured; says he is not refreshed by his sleep; has had a general warm perspiration; some exacerbation of fever; pulse ninety, and fuller; tongue dry, brown, and pointed; thirst great. Ordered one of the following pills every two hours, with some drink and nourishment.

℞	Hydrarg. Chlorid. Mit.	gr. vj.
	Pulv. Antimonialis	
	Pulv. Ipecac. Comp. aa	gr. xij.

M. ft. pil. No. vj.

8 *P. M.*—Met Dr. May. No new symptom had occurred except the expectoration of pinkish mucus. Ordered continuance of pills, &c. with a large blister over the right hypochondriac, extending to the epigastric region.

30*th.*—7 *A. M.*—Has passed a comfortable night, with the exception of unpleasant dreams; seems better; says he feels better; pulse eighty; tongue more moist; still furred; less thirst; bowels not having been opened for twelve hours, and he complaining of uneasiness from distension, we ordered one of the following pills every three hours till they operated:

℞	Sub. Mur. Hydrarg.	gr. xij.
	Pulv. Ipecac.	gr. iij.
	Pulv. Rhei	gr. xv.

M. ft. pil. No. iv.

Continuance of nourishment and drink.

2 *P. M.*—Had taken one of the pills, and the half of another; has had no action on the bowels; can lie on his back, or

either side, though easiest on his right side; cough and ecpectoration the same; some exacerbation of fever; pulse eighty-five; tongue dry; more thirst, and complains of uneasiness in his bowels; ordered a continuance of the medicine, &c.

7 *P. M.*—Met Dr. May. Took no more of the pills of calomel and rhubarb; has had several free evacuations from his bowels, which, debilitating him, and being likely to continue, ordered of the following pills every two hours *pro re nata*:

℞	Sub. Mur. Hydrarg.	gr: xij.
	Pulv. Opii	
	Pulv. Ipecac, aa	gr. iij.
	Camphoræ	gr. vj.
	M. ft. pil. No. xij.	

with a little weak brandy-toddy, and nourishment; with hot fomentations to the abdomen.

31*st.*—7 *A. M.*—Met Dr. May. Has taken his pills regularly; has had one or two small stools, lighter color; expectoration and other symptoms much the same; pulse soft, compressible, and intermittent, about eighty; ordered continuance of pills every three hours, with infusion of serpentaria and seneka; drink and nourishment, and a little wine whey.

2 *P. M.*—Met Dr. May. Has been in a fine warm perspiration all the morning, dozing a little, lying on either side; cough the same, with a more copious expectoration of a yellowish viscid mucus, tinged with blood, pulse now ninety, soft and regular; tongue the same; in other respects the same; discontinue pills; continue the serpentaria and seneka, with some drink and nourishment.

7 *P. M.*—Met Dr. May. Has continued to take the serpentaria and seneca; find he has some exacerbation of fever; gave one of the following pills every three hours:

℥	Sub. Mur. Hydrarg.	
	Pulv. Ipecac.	
	Pulv. Antim. aa	gr. xij.
	M. ft. pil. No. vj.	

and between each dose ℥ss. of spirit of Mindrerus, with 1-12th of a grain of tart. antim., till perspiration and sleep are induced; drink, the same.

April 1*st.* 7 *A. M.*—Met Dr. May. The pills and spiritus Mindereri were taken till they produced the desired effect, and he had a good night. At this hour his perspiration was too free, though warm; feels debilitated by it, discontinued all medicine for the present, and ordered cordial nourishment

and drinks; applied ung. hydrarg. comphorat. over the whole abdomen and blistered surface.

1½ *P. M.*—Complained of feeling relaxed and uncomfortable; took wine whey, cream, &c.; had a small dark green passage, and more consistent; some incoherence; muttering while dozing; picking at the bed-clothes; baring his breast; pulse soft, and compressbile. We had applied blisters to inside of the thighs; says his blister on the side feels pleasant; has had frequent discharges from his bowels, with much dryness of the mouth and fauces; tongue dry and brown; took some carrageen at 2; seemed better; pulse eighty, soft; skin warm; mouth not so dry; thirst less; feels blisters; has taken serpentaria, &c. every three hours.

2½ *P. M.*—At my request, the President and his family added Dr. N. W. Worthington, of Georgetown, and Dr. J. C. Hall, of this city, to our consultation; these gentlemen met Dr. May and myself at this hour. After a minute examination and a detail of the history of the case, they perfectly agreed with us, both in our opinion of the character of the case, and in the propriety of the treatment. At this time the situation of the President was as above described; we agreed to continue the serpentaria and senaka infusion, with the addition of a few drops of the aromatic spirits of ammonia to each dose; and at bed time to give five grains of the hydrargyrum cum cretâ, with an anodyne, if necessary.

9 *P. M.*—Has taken the infusion regularly; could be prevailed on to take but one dose of the ammonia; has had one free evacuation from his bowels; about 8 o'clock, was seized with return of pain in the side, which was readily relieved by the application of warm poultices over the blistered surface, and Gransville's lotion along the spine; it then attacked him over the right brow; the lotion relieved it instantly, but it returned to the side. The application of the lotion to the brow and spine at the same time removed the pain entirely; afterwards he complained of soreness and cramp in the gastrocnemius muscle, which were removed by frictions; has been all the evening in a fine warm perspiration; cough, expectoration, &c. much the same. The hydrargyrum cum cretâ was given, with twenty drops of laudanum.

10 *P. M.*—Became restless; moans a good deal; skin moist and warm; pulse, &c., the same; has taken a little nourishment. Dr. Hall remained with me to-night; we agreed to give one of the following pills every two hours till composed, viz:

℞ Hydrarg. Chlorid. Mit.
Camphoræ aa gr. vj.
Pulv. Opii gr. iij.
M. ft. pil. No. vj.

April 2d. 10 *A. M.*—Met Drs. May, Worthington, and Hall. Has passed a comfortable night; took his pills; infusion and nourishment when awake. His tongue is dry and brown; thirst great; skin warm and moist; pulse ninety, soft and regular; some cough; expectoration brownish mucus, tinged with blood; says he does not feel as well as he has done, though he makes no particular complaint; we considered him rather worse; we agreed to give him two grains of blue mass every three hours, with the serpentaria and seneka infusion; nourishment, &c., continued.

6 *o'clock, P. M.*—Met Drs. May, Worthington, and Hall. Has taken his pills and infusion regularly; had several small brownish watery evacuations from the bowels, which he says weakened him; had taken some beaf tea, weak brandy toddy, &c.; slept an hour or two: during this sleep some incoherent muttering; had taken a few drops of laudanum to quiet the bowels, and relieve griping. We find him as follows: pulse eighty, soft and full; skin warm and moist; tongue broader and softer; agreed to give him half a grain of calomel, half a grain of camphor, and a quarter of a grain of opium, every two hours, with some nourishment, &c. &c.

April 3d. 12 *o'clock, M.*—Dr. Alexander, of Baltimore, being added to the consultation, met Drs. May, Worthington, Hall, and myself. Dr. A. concurred entirely in the view which had been taken of the case, and the treatment pursued. During the night, the tongue, pulse, and skin, had remained as usual, and he had had one copious evacuation, which did not weaken him, though he got up to the chair, as he had insisted on doing, throughout his illness. Sleep, accompanied by muttering, and disturbed by a dry hacking cough, which was relieved by a tea-spoonful of the syrups of squill, morphia, and Tolu, in equal quantities. From 2 to 5 A. M. had slept sweetly; from which time to the present had dozed and muttered, but when aroused his mind was perfectly clear; felt relaxed; had taken wine whey, the pills of calomel, camphor, and opium, being continued.

We found an exacerbation of fever denoted by a reddened and heated skin, increased frequency of the pulse; medicine ordered to be discontinued, and cooling drink to be given.

This excited state soon subsiding, we were compelled to resort again to the cordial drinks and nourishment.

Up to this time he had been propped up in bed, and said that he felt much better; encouraged his friends with an expectation of a speedy recovery.

2 *o'clock*, *P. M.*—Moaned very much and talked in his sleep.

2½.—Was much exhausted by a very large and feculent discharge; took brandy and water and jelly.

4.—More feeble and languid; gave twenty drops of laudanum to check an inclination to another passage.

4½.—Langour increasing; fell rapidly off into a dozing state from which it was difficult to arouse him; pulse slow, hobbling, and intermittent. Features shrunken and pinched; skin dark and muddy. The stimulents were urged; sinapisms applied to extremities and abdomen: sent for consulting physicians.

5.—Abdomen distended; more incoherence; had a large serous evacuation from bowels, (still insisted upon getting up to the chair,) by which he was much exhausted; gave starch, laudanum, and kino injection; sponged with hot spirits of turpentine.

6.—Met consulting physicians; we consider the case hopeless: pulse sinking; extremities blue and cold: directed camphor and carbonate of ammonia emulsion, with hot brandy toddy, and frictions.

7.—Had several small serous discharges; stimulating treatment continued.

8.—All the mortal symptoms increasing; our efforts to sustain him still continued.

8¾.—He uttered these words, as heard by Dr. Worthington and Mr. Samuel D. Naughan, cupper, leecher, &c., "Sir, I wish you to understand the true principles of the government; I wish them carried out, I ask nothing more." Immediately afterwards he fell into a state of total insensibility. Finally, at half past 12 on the morning of the 4th of April, without a groan or a struggle, he ceased to breathe.

We regret to state that our efforts to obtain a post mortem examination were unsuccessful.

THE WESTERN JOURNAL

Vol. III.—No. VI.

LOUISVILLE, JUNE 1, 1841.

OUR UNDERTAKING.

This number completes our third volume. To say that we have made the work what it should have been; or what, under other circumstances than those in which we have been placed, we ourselves might have made it, would be boastful. Nevertheless, we are gratified in being able to state that its patronage has been steadily increasing from the commencement; and has become such, as to guaranty its permanence. Being the only medical or scientific journal in the Valley of the Mississippi and the Lakes, its cognomen "Western" cannot be regarded as presumptuous; and we trust that our Western brethren will think with us, and act accordingly. Of course we are not hinting to them, in the imperative mood, "*subscribe!*" Such hints we leave, gentle reader, to our publishers;—happy to know that we could not confide it in abler hands. But we *are* hinting, that we should be glad to receive *good* communications, from all parts of the aforesaid Western Valley. All communications are either good, bad or indifferent. Heretofore we have not had more bad ones than was supportable, but the number of indifferent has been rather too great, of the good too small. The bad give us no trou-

ble—the indifferent no pleasure—the good no trouble and much pleasure. It is quite natural, then, that we should prefer them to all others; and we assume that our readers have nearly the same preference.

THE SPRING.

Till within the last fortnight, which has brought us Summer heat and drought, the Spring has been cold, with an extraordinary prevalence of East and Northeast winds; and the Ohio has kept at an elevation indicative of much rain within its borders. Vegetation has of course been backward. We hope that our brethren have attentively marked the effects of this kind of weather on our vernal diseases; and that some of them will in due time give us the results of their observation. D.

We learn that Dr. Bartlett, of Lowell, Mass., has been appointed to the chair of Theory and Practice in Transylvania University.

MOVEMENTS OF MEDICAL MEN.

The distinguished American Surgeon, Dr. Mott, after a residence of several years, in Paris, has returned to New York, his native place, and will, it is said, accept the chair of Surgery in the University of that city.

Dr. Oliver, of New Hampshire, has resigned, after one session, the professorship of Materia Medica in the Medical College of Ohio, and returned home.

We are happy to be able to announce the safe arrival in Europe, of our colleague Professor Caldwell. D.

MEDICAL SOCIETY OF TENNESSEE.

From the Nashville papers we learn that the late meeting of this Society was well attended, and that its exercises were unusually spirited and interesting. It seems io be gaining with the profession, and is said to be exerting a fine influence upon it. Dr. Hogg, the venerable Presi-

dent, delivered an address which will appear in an early number of our Journal. The annual address was delivered by Dr. L. P. Yandell. A number of instructive cases were reported, and have been placed in the hands of the editors of this Journal for publication. Dr. Brown, of Columbia, was appointed Orator for the next meeting, and an able address may be expected. At the same meeting the Vice President, Dr. Buchanan, also of Columbia, is to deliver an address, according to a standing rule of the Society. In our next number a more detailed account of the proceedings of this spirited, business-doing association may be expected.

D.

DEATH OF DR. DEWEES.

The Philadelphia papers announce the death of Dr. William P. Dewees, formerly Professor of Obstetrics in the University of Pennsylvania. It took place on the 18th instant, in the seventy-fifth year of his age. A few years ago Dr. Dewees resigned his chair, on account of declining health, and went to Alabama; he resided for a while at Mobile, then in New Orleans, and finally returned, about twelve months ago, to Philadelphia, where he has closed a life of great usefulness among his former friends. The nature of his last illness is not stated. As a practitioner of midwifery, he enjoyed for many years the highest confidence of the community, and his business in that branch of medicine was undoubtedly much more extensive than ever fell to the lot of any one individual in America. Indeed, such was his reputation at one time that very few of the more respectable dames of the city of "brotherly love" were willing to be delivered without his aid. In all difficult cases his counsel was invariably sought by his confreres.

Dr. Dewees was a voluminous writer. His works on midwifery, and the diseases of women and children are every where known, but the question as to their real merit is not definitively settled. Their chief faults are that they are exceedingly verbose, highly inelegant in their style, wholly deficient in pathological details, and full of the grossest dogmatism. In this latter respect they form a striking contrast with the writings of the late Professor Eberle, which are as modest and unassuming, as those of Dr. Dewees are bold, and authorative. The tendency of both is decidedly injurious to the true interests of medical science. As a teacher Dr. Dewees occupied, we believe, a high rank. For many years he was adjunct to Professor James, on whose death he was elevated to the vacant chair.

G.

PRIZE ESSAY.

The newspapers of Nashville announce that Professor Yandell, of the Louisville Medical Institute, obtained the Premium, offered by the Medical Society of Tennessee a year since, for the best dissertation on Bilious Fever.

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